

The Impact of Shale Development on Housing and Homelessness in Eastern Ohio

**Belmont, Carroll, Columbiana, Guernsey, Harrison, Jefferson,
Monroe, and Noble Counties**

**Prepared by Ohio University's Voinovich School of Leadership
and Public Affairs**

on behalf of the Ohio Housing Finance Agency

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The views expressed in this report are those of the authors and do not necessarily reflect the official policies or views of the State of Ohio or the Ohio Housing Finance Agency.

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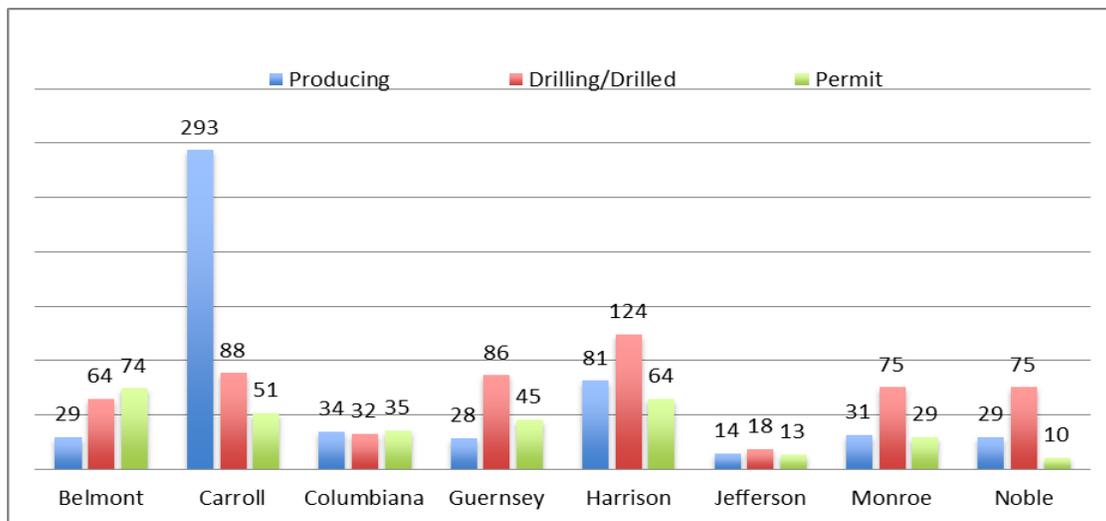
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Introduction

This report provides the findings of a study commissioned by the Ohio Housing Finance Agency (OHFA) and conducted by Ohio University’s Voinovich School of Leadership and Public Affairs in 2014. The purpose of the study was to gauge the impact of shale development on housing and homelessness in Eastern Ohio, and to devise strategies for addressing the present and future housing impacts of the industry. This study builds on a growing body of research exploring the impacts of shale development on local communities.¹ In particular, it is part of a portfolio of research commissioned by OHFA in order to document the housing impacts of gas and oil activity in Ohio.²

The specific counties included in the study region are Belmont, Carroll, Columbiana, Guernsey, Harrison, Jefferson, Monroe, and Noble counties. These counties have been the site of much of the gas and oil industry’s activities in Ohio’s portions of the Utica and Marcellus shale plays. They are also the site of much of Ohio’s permitted future drilling. Figure 1 provides an overview of upstream well-related activity in the counties as of September, 2014.

Figure 1. Well data for target counties (as of September, 2014)



Source: Ohio Department of Natural Resources RBDMS database

¹ See for example J. Williamson, B. Kolb, Marcellus Natural Gas Development’s Impact on Housing in Pennsylvania (September 23, 2011) available at http://www.cohhio.org/files/HOUSING%20PHFA%20Marcellus_report.pdf ; See also B. Weber, J. Geigle, C. Barkdull, Rural North Dakota’s Oil Boom and Its Impact on Social Services (2014) available at https://www.acosa.org/joomla/pdf/Weber_et_al.pdf

² See, for example, Farren, M.D., Weinstein, A. Partridge, M.D. & Betz, M (June 2013). “Too Many Heads and Not Enough Beds: Will Shale Development Cause a Housing Shortage?” The Ohio State University: Swank Program in Rural-Urban Policy; Partridge, M.D., M.D. Farren, A. Weinstein, & M. Betz (March 2013). Assessing the Impact of Shale Energy Boom on Ohio Local Housing Markets”; Ohio University’s Voinovich School of Leadership and Public Affairs, “The Impact of Horizontal Shale Well Development on Housing: Five County Region Briefing Report,” and “The Impact of Shale Development on Housing in Carroll County.” All reports are available at <http://www.ohiohome.org/research/relatedresearch.aspx>

This study employed qualitative research methods to collect information from research participants across the eight target counties. Using purposeful and snowball sampling, researchers conducted key informant interviews, focus groups, group interviews, and follow up interviews with housing stakeholders and social service agencies serving populations potentially impacted by housing changes. Research participants included realtors, bankers, landlords, local government officials, economic developers, directors and caseworkers from social service agencies, legal aid workers, and others. (See Appendix A for an explanation of the study's research methods, and Appendix B for a list of organizations represented by research participants.)

As would be expected, research participants had varying perspectives on the extent of shale development's impact on housing and homelessness. Despite this, a clear picture of the impact on housing and homelessness emerged, and this picture is consistent with what the literature on shale development and housing leads us to expect. The following are some of the key impacts and themes identified through the research.

Impact of Shale Development on Housing and Homelessness

Impact on Rental Markets

Local entrepreneurs and private companies have built hotels as well as formal and informal campgrounds and RV parks as a way to mitigate housing shortages for transient workers. While this alleviates pressure on the rental market, it is not enough to maintain ample affordable housing for residents. **Research participants in all counties estimate that rents for one-, two-, and three-bedroom units have at least doubled. In Guernsey, Jefferson, and Monroe counties, participants estimate that rents have tripled.** Housing Choice Voucher utilization has decreased in some, but not all, of the counties under study, a development that research participants attribute to the discrepancy between Fair Market Rents (FMR) and actual rents. Many organizations that serve seniors, veterans, foster children, individuals with mental illness, or those with developmental disabilities report great difficulty finding housing for their clients.

Impact on Home Buying

In several counties, steep increases in rent are leading some renters to consider home ownership a more affordable alternative to renting. **First-time homebuyers, especially those looking for homes under 150,000 dollars, are finding it increasingly challenging to locate safe, decent, affordable homes.**

Impact on Homelessness

Evictions and homelessness are on the rise in the study area. **The options for assisting the homeless are growing fewer, especially in Guernsey and Harrison counties.** Shelters in Jefferson County and Tuscarawas County seem to be bearing the brunt of a recent increase in homelessness in the study area.

Community Needs

All communities expressed a need for more affordable housing through new development or rehabilitation. Several factors are hampering communities' ability to respond strategically to the increased housing demand. First, **there is a lack of clear information about the trajectory of shale development in the area.** Second, there are preexisting challenges pertaining to affordable housing development in many of these counties. These include a lack of the waste and wastewater infrastructure needed for housing development, as well as a lack of experience putting together development deals in some communities. Third, many research participants expressed concern that development of new housing to meet the current need could create an excess of housing after the demand placed on the housing market by oil and gas workers diminishes.

Suggestions for addressing impacts

This report documents the strategies suggested by research participants for addressing the impact of shale development on housing and homelessness. It is important to note that most of these strategies, if implemented in isolation, would be less successful than if they were implemented as part of a larger, collaborative effort. **Addressing the need for affordable housing in areas impacted by shale development requires action on many fronts, by many actors.**

The following are some of the suggested strategies identified through the research process. These and other strategies are discussed in more detail in the final section of this report.

OHFA-specific Strategies

- Provide support for first time homebuyers, particularly in the following counties: Belmont, Guernsey, Jefferson, Monroe, and Noble. This support could take the form of OHFA's First Time Homebuyer Program, including down payment assistance.
- Allocate tax credits to areas impacted by shale development. All counties except for Monroe County identified a need for new construction of affordable housing. Specific locations identified by research participants include: Bellaire, Caldwell, Cambridge, Carrollton, East Liverpool, St. Clairsville, Salem, and Steubenville. Some participants also expressed a desire for affordable housing in Monroe and Noble counties outside of Caldwell and Woodsfield.³
- Convene funders to ensure that development efforts in impacted areas have sufficient funding to make development viable.
- Use influence to suggest or endorse a regional approach to addressing the impact of shale development on housing and homelessness.

³ These recommendations are largely based on the judgments of service providers who are trying to place clients in affordable housing. While these providers are a good source of information about the location of affordable housing shortages, it should be clearly noted that these recommendations are not based on market studies or other formal predevelopment work.

Strategies for Other Actors

- Change HUD-defined FMR in counties affected by shale development, in order to keep FMRs commensurate with rent increases, and to enable service organizations whose assistance to clients is limited to FMRs to better assist their vulnerable clients.
- Change state land bank legislation so that counties with populations lower than 60,000 can pool populations and resources to meet the pressing need for rehabilitation of the housing stock. A need for rehabilitation was signaled in Belmont, Columbiana, Guernsey, Jefferson, and Noble counties.
- Increase support for the growing homeless population and for the service agencies that support this population. Participants from Belmont, Carroll, Columbiana, Guernsey, Harrison, Jefferson, and Noble counties all identified a need for increased capacity to serve the homeless in their counties. This includes construction of homeless shelters in counties that currently have no shelters (Guernsey, Noble and Harrison counties).

Structure of the Report

The next section of this report provides background information on both the shale industry and the eight counties in the study area. This section is followed by a series of county summaries, which provide information on shale activity in each of the eight counties, as well as the impact of this activity on housing and homelessness. This section also includes information on strategies currently being pursued to address the housing impact, and related needs identified by the community.

The individual county summaries are followed by a discussion of the common themes that emerged in each county, as well as the ways in which the housing impact varied across counties. The final section of the report proposes a series of strategies that could be used to address the impact of the gas and oil industry on housing and homelessness.

Background

Shale Industry and Housing

The existing literature, based on experiences in North Dakota, Pennsylvania, and other sites of shale development, tell us that there is a general pattern to the impact of shale development on and housing homelessness.⁴

Upstream Phase

The first phase of gas and oil activity is the upstream phase, also known as the exploration and production phase, and typically generates a need for relatively short-term housing. During this time, energy companies send workers into communities to research property and mineral rights, then to build well pads, drill wells, and lay pipeline. Workers carrying out these activities are usually in the area for a limited time, and their housing needs are primarily met by communities' existing rental stock, hotels, and living situations sponsored by gas companies (including "man camps," properties purchased and renovated by gas companies, and modular housing).

The increased demand for rentals caused by this first phase drives up the cost of rentals, making it harder for individuals and families with limited incomes to find suitable housing, and placing stress on service agencies that are trying to house low-income, senior, mentally ill, disabled, or homeless clients. These types of impacts are generally greatest in communities with a pre-existing shortage of adequate rental housing (and Carroll, Guernsey, and Monroe were the only counties that reported a sufficient pre-shale housing supply).⁵

Midstream and Downstream Phases

The midstream and downstream phases of gas and oil activity involve the processing, storing, transporting, and distribution of gas and oil products. These phases involve workers who have more varied income levels and housing needs. As longer-term positions are created in the area for employees who will supervise production operations, demand for longer-term housing increases. If the income of local residents is increased either through employment or mineral royalties, these residents may also be in the market for higher quality, long-term local housing. Because of this, the later phases of activity generally have a larger impact on the market for owner-occupied homes.

⁴ There are a variety of conceptual frameworks used to describe the phases of shale development. Some divide development into "upstream," "midstream," and "downstream" phases; others speak in terms of waves; still others divide the process into the "Innovator Stage," "Landmen Stage," "Roughneck Stage," and "Asset Manager Stage." Industry generally uses upstream, midstream, and downstream, and most research participants spoke in these terms, so that is the phrasing used in this report. See M. Farren (2014) "Boomtowns and Nimbleness of the Housing Market: The Impact of Shale Oil and Gas on Local Housing Markets," Selected Paper prepared for presentation at the Agricultural & Applied Economics Association's AAEA Annual Meeting, Minneapolis, MN; and Williamson & Kolb.

⁵ Williamson & Kolb

Eastern Ohio Region

In Ohio, these phases of the shale industry are playing out primarily in the eastern portion of the state, where the Marcellus and Utica shale plays are located. This study focuses on a portion of Eastern Ohio, specifically Belmont, Carroll, Columbiana, Guernsey, Harrison, Jefferson, Monroe and Noble counties. The eight counties under study were selected because a significant majority of drilling activity and permitted future drilling is concentrated in this region. The counties were also selected because they are contiguous, allowing the research team to examine regional impacts as well as county-specific changes to the housing market. These Eastern Ohio counties span over 3,635 square miles, and are home to over 365,000 Ohioans. Figure 1 provides a graphical representation of the study area.

Figure 2. Study Area



There is significant poverty in the counties in the study area. Per capita income in each of the counties is lower than the state average. Columbiana, Guernsey, Harrison, Jefferson, and Monroe counties have a higher percent of residents below the poverty level when compared to the state average. Almost all counties have a higher percent of families (with children under 18) living below the poverty level when compared to the state average. Table 1 below provides information about income levels in the study area.

Table 1. Income Data for Study Area

County	Per Capita Income	Percent of All People Below Poverty Level	Percent of Families with Children Under 18 Below Poverty Level	Percent of Households Receiving Food Stamps/SNAP Benefits in Last 12 Months
Belmont	\$22,380	14.6	19.8	13.3
Carroll	\$21,783	15.5	21.2	12.6
Columbiana	\$21,575	16.9	22.2	16.4
Guernsey	\$20,537	20.3	28.2	19.1
Harrison	\$21,029	18.4	26.9	17.6
Jefferson	\$22,324	16.6	23.1	16.9
Monroe	\$21,487	19.0	27.2	11.9
Noble	\$18,853	15.2	19.0	15.4
State	\$26,046	15.8	19.5	14.5

Source: U.S. Census Bureau; 2013 American Community Survey 5-year estimates

Many of the counties under study are sparsely populated, though more densely populated areas can be found within Belmont, Columbiana, and Jefferson counties. The most populous county in the region is Columbiana County (105,896 people), while Noble and Monroe are two of three least populous counties in the state (ranking 86 and 87 respectively out of 88 counties.) These characteristics can make development of affordable housing challenging. Table 2 provides information on the population of the study area.

Table 2. Population Data for Study Area

County	Population ^a	Classification ^b	Population Density ^c (people per square mile)	Cities in County ^d
Belmont	69,571	Metro (small)	132.3	St. Clairsville, Martins Ferry
Carroll	28,275	Metro (medium)	73.1	--
Columbiana	105,896	Nonmetro (micropolitan)	202.7	Columbiana, East Liverpool, Salem
Guernsey	39,636	Nonmetro (micropolitan)	76.8	Cambridge
Harrison	15,622	Nonmetro (noncore)	39.4	--
Jefferson	67,964	Metro (small)	170.7	Richmond, Steubenville, Toronto
Monroe	14,585	Nonmetro (noncore)	32.1	--
Noble	14,628	Nonmetro (noncore)	36.8	--

a. Source: U.S. Census Bureau; 2013 American Community Survey 5-year estimates

b. Source: <http://www.cdc.gov/nchs/images/popbridge/URv3.png>

c. Source: U.S. Census Bureau; Population, Housing Units, Area, and Density: 2010 - County -- Census Tract 2010 Census Summary File 1

d. Source: Ohio Municipal League

The housing stock in the target counties is aging. At least a quarter of the housing stock in all counties was built before 1950, and over 41 percent of the housing units in Belmont and Harrison counties are over 65 years old. While vacancy rates are not extremely low in the counties, this is likely in part because of the substandard nature of much of the housing stock. See Table 3 below for more information on the housing stock in the eight target counties.

Table 3. Housing Stock Data for Study Area

County	Population	Number of Housing Units	Percent Vacant Units	Percent Renter Occupied Units	Percent Houses Built Before 1950
Belmont	69,571	32,327	12	25	41
Carroll	28,275	13,628	18	21	26
Columbiana	105,896	46,882	10	27	36
Guernsey	39,636	19,091	18	26	34
Harrison	15,622	8,109	21	23	41
Jefferson	67,964	32,689	13	27	36
Monroe	14,585	7,523	19	21.0	37
Noble	14,628	6,030	19	19.7	36

Source: U.S. Census Bureau; 2013 American Community Survey 5-year estimates

Individual Counties

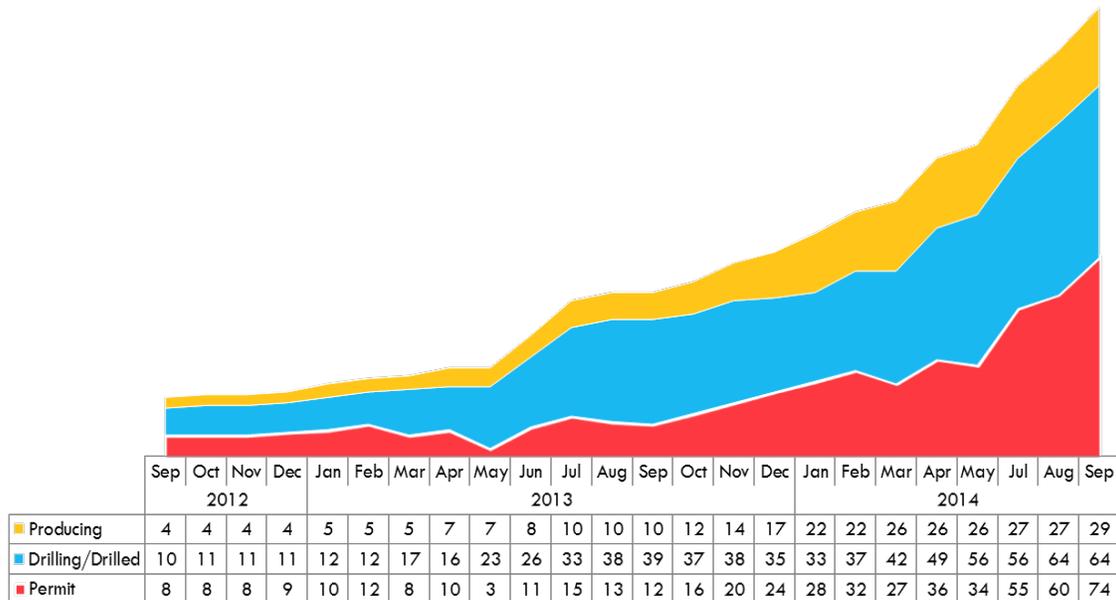
Belmont

Gas and Oil Activity

Upstream

Figure 3 shows the progression of shale development in Belmont County. At the time of data collection, the Ohio Department of Natural Resources (ODNR) had issued 167 permits to drill in Belmont County. In addition, 93 wells had been drilled or were in the process of being drilled, and 29 wells were producing gas or oil.

Figure 3. Belmont County Shale Well and Permit Status



Source: Ohio Department of Natural Resources RBDMS database

Drilling permits have been secured by eight different companies in Belmont County, with Gulfport Energy being the largest.

Midstream

In addition to drilling activity, Belmont County is home to several midstream companies as secondary suppliers move their operations into the area to be closer to drilling activity. Existing companies such as M&M Pump and Supply have invested in infrastructure to expand current

operations.⁶ Natural gas pipeline continues to be constructed through the county and several retail stores for worker apparel are located in Belmont County.

Housing Stock Prior to Shale Development

Research participants report first noticing the arrival of gas and oil workers roughly three years ago, at a time when they perceived the housing stock already to be aging and in short supply. Many residents were already employing couch surfing and doubling up as housing strategies. Of the counties assessed in this study, Belmont County has some of the oldest housing stock with 41 percent of all housing built prior to 1950. Of the 32,327 housing units located in Belmont County, 3,998 (12.4 percent) are vacant.⁷

Types of Housing Being Used by Shale Workers

Shale workers from the first wave of development are reportedly living in hotels (several newly constructed), RV camps, single-family dwellings (rented by room) and new apartment complexes. The town of Martins Ferry has changed zoning ordinances to make a man camp legal within the town limits. Individuals throughout the county are also renting space on their properties for RV campers. Other residents are purchasing homes, fixing them up, and renting them out at rates only affordable to gas and oil workers. Commercial spaces in non-zoned areas have been renovated into living quarters for gas and oil workers.

Impact on Rental Market

Despite the fact that some of the first wave of housing demand has been absorbed by hotels and campgrounds, rents have risen steeply. One realtor estimated that rents have increased by 50 to 100 percent (from a range of 700-800 dollars a month up to 1,000-1,200 dollars a month). Others report that rents that were once 400 dollars a month are now between 600 and 800 dollars a month.

This estimated increase in rents contrasts sharply with the increase in FMRs in Belmont County. FMR for a two-bedroom unit, for example, has only increased by 6.3 percent since 2011 (from 596 to 634 dollars).⁸ (See Appendix D for FMR data for all counties in the study area.) The MHA reports that vouchers are becoming more difficult to use. In a six-month period last year, almost 100 families attempted to use vouchers to secure housing before 20 of them were successful. The Developmental Disabilities Board in the county reports that “fewer landlords want to rent through Metropolitan Housing (and meet its requirements) for 350 dollars per month. These landlords can easily triple their rental income and not have to deal with the red tape of Met Housing.”

⁶ Bricker & Eckler Attorneys at Law. (2014). Shale Economic Development Overview

⁷ This and all housing stock age and occupancy data from U.S. Census Bureau, 2009-2013 American Community Survey 5-year estimates

⁸ This and all FMR data in this report from HUD FMR Documentation, <http://www.huduser.org/portal/datasets/fmr.html>

Since the demand for rentals has increased, landlords have adapted by offering variable lease terms and furnished dwellings. According to social service agencies, some landlords are showing less leniency to renters who are behind on their rent, and evictions are on the rise. Research participants reported that trouble accessing affordable housing is now a problem throughout the county. Low-income individuals and families are being affected more than seniors. If individuals whose incomes are low enough to qualify for subsidized housing want instead to live in market rentals, there is very little chance that they will find something within their price range that is not substandard.

Impact on Homelessness

Potential renters with imperfect rental histories or criminal records are finding it hard to compete for a unit in a shrinking pool of affordable rentals. As low-income individuals find it harder to locate affordable housing, and as evictions are on the rise, homelessness is a growing problem in Belmont County. The Salvation Army, which runs the local 40-bed homeless shelter, reports that it is at capacity and, since the arrival of the shale industry, cannot find housing for its clients. The shelter has begun transporting homeless persons to shelters in Sandysville and Newark.

The income level of individuals and families resorting to couch surfing and doubling up has been increasing. Social service agencies report that while their clients have already been using these coping mechanisms, people with income levels too high to qualify for their services are now engaging in these practices as well.

Impact on Home Sales

One realtor estimated that the overall housing market has increased by 20 percent. High rents are driving some individuals and families to consider buying a home, but home prices have increased along with rents. Homes in the 100,000-150,000 dollar range are reportedly in short supply. Another participant reported that it is now common to see homes priced at 250,000 dollars or above that would have been in the 100,000 dollar range prior to shale development.

Community Needs and Strategies

The general sense among participants was that the impact of shale development on housing would continue for at least five more years, though many participants expressed uncertainty about the trajectory of the industry in Belmont County.

Many participants noted a need for both new housing and the rehabilitation of existing housing stock. Some participants suggested preferential allocation of tax credits would facilitate new construction of low-income housing. Some also indicated that organizations within the county would benefit from capacity building in order to effectively partner with developers. Rehabilitation of housing is being facilitated by a recently established land bank in the county.

Social service agencies identified a need for renter education, so that low-income renters will not be evicted unfairly, and so that these families will be more aware of their responsibilities as

renters and less likely to give landlords cause for eviction. Assistance for individuals seeking to buy homes would also be welcomed.

Many participants also noted that HUD Fair Market Rents (FMR) are inadequate for the rental market in the county, and that an increase to the FMR would provide service agencies with more adequate resources.

Research participants agreed that there is a need for wealth-retention strategies in order to encourage Belmont County residents who are profiting from the gas and oil industry to support their community, including its housing needs.

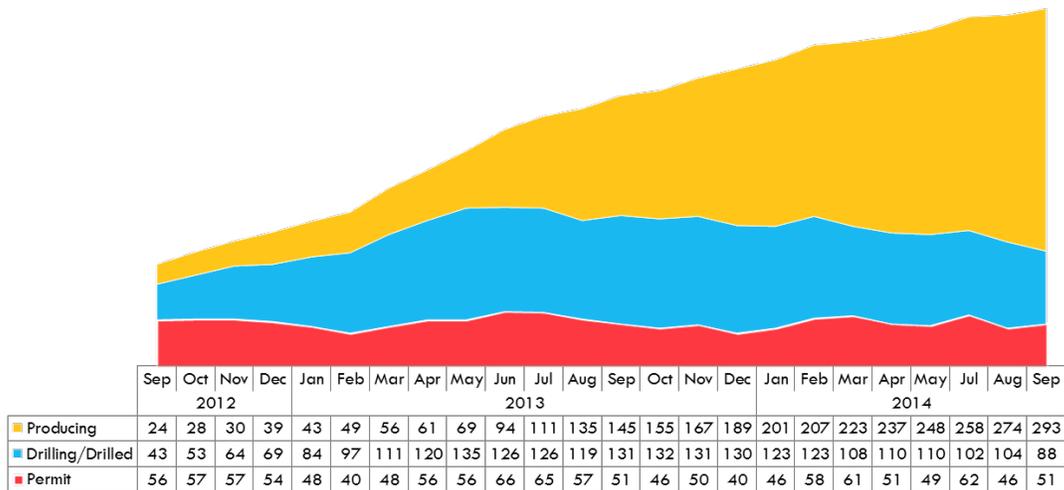
Carroll

Gas and Oil Activity

Upstream

Permits for drilling in Carroll County were first issued in 2011, and activity began picking up quickly in 2012. In September, 2014, there had been 432 permits issued for drilling in Carroll County. Of those, 381 sites had been drilled, and 293 of those wells were producing gas and oil. By the end of 2013, 10,145 barrels of oil and 164,066 McF had been extracted from Carroll County wells. Chesapeake Energy is conducting over 90 percent of all drilling activity in Carroll County.⁹

Figure 4. Carroll County Shale Well and Permit Status



Source: Ohio Department of Natural Resources RBDMS database

⁹ Ohio Department of Natural Resources

Midstream

To support significant drilling activity in Carroll County, suppliers such as equipment rental companies and pipeline layers are also in the county. Carroll County Energy, a subsidiary of Advanced Power, is constructing a natural gas-fueled electric power plant in 2015. This construction will bring up to 500 construction jobs to the area. In addition, a new wastewater treatment facility and wastewater recycling facility have been created in Carroll County.¹⁰

Housing Stock Prior to Shale Development

There are 13,628 housing units in Carroll County. The housing stock is relatively old, with 26 percent of all housing units built prior to 1950. Prior to the arrival of the gas and oil industry, researchers reported that there was sufficient affordable housing in the Carroll County, possibly even an excess.

Types of Housing Being Used by Shale Workers

There has been a revitalization of campgrounds in the county to accommodate worker RVs. Residents are also renting space on their private property for RVs. Workers are also living in rental units and recently constructed hotels. Other efforts to provide housing for workers have not been successful, as an initial effort by a developer to build modular housing was denied.

Impact on Rental Market

Rents continue to be high in Carroll County. Job and Family Service (JFS) workers report that their clients used to rent homes in the 350 to 500 dollars a month price range, but that these homes are now being rented for 800 to 1,200 dollars a month. Another research participant reported that rents that were once 400 dollars a month have risen to 1,200 dollars a month. Despite this increase, FMR for a two-bedroom unit in Carroll County has increased by only 7.5 percent from 2011-2015 (from 628 to 675 dollars). Children Services reports that it has had to adjust its estimation of substandard living conditions, because the housing that is accessible to clients is of poorer quality than ever before. One agency that serves seniors reported that seniors leaving rehabilitation facilities can find a place in senior housing, but if they choose not to live in senior housing, or do not qualify, they are facing challenges finding a place to live.

As the increased demand for housing persists, realtors are becoming more involved in the rental business and leasing practices are becoming more formalized. Landlords are providing furnished apartments and including utilities in the rent in order to attract workers.

Impact on Homelessness

Homelessness is increasing, especially the “hidden homelessness” (e.g. couch surfing and doubling up) that research participants say is not captured by the HUD definition of homelessness. Some families are reportedly leaving the county for Jefferson County in an

¹⁰ Bricker & Eckler (2014) and Carroll County Energy (2015)

attempt to find affordable housing and avoid homelessness. Service agencies are having to send newly homeless clients to Jefferson County for shelter.

Impact on Home Sales

Participants reported that land and home values have increased. Some homeowners are reportedly deciding to rent their homes rather than sell them, in order to take advantage of the increased demand for rental housing.

Community Needs and Strategies

As in other counties, Carroll County JFS has increased the maximum amount of Prevention, Retention and Contingency (PRC) funds that they release to clients (from 500 to 800 dollars), but find that one-time payments to help families get into homes or avoid evictions do not really address the fact that monthly rents are consistently higher than families can afford. Harcatus Tri-County Community Action Organization has been able to provide some rental assistance to families, but only to those who are very low income.

Research participants identified the need for more affordable rentals. Participants also identified a need for a homeless shelter, and some identified a structure on the outskirts of town that might be converted into a shelter.

Respondents identified the need for a more organized response to the increased housing demand and the opportunities presented by gas and oil activities in the area. Some respondents attribute a lack of organized response to the housing issue to the fact that there is no Metropolitan Housing Authority in Carroll County.

One effort to organize a response has been led by the Carroll County Family and Children First Council, which commissioned a survey of clients of social service agencies in order to gather information on their housing circumstances and needs.

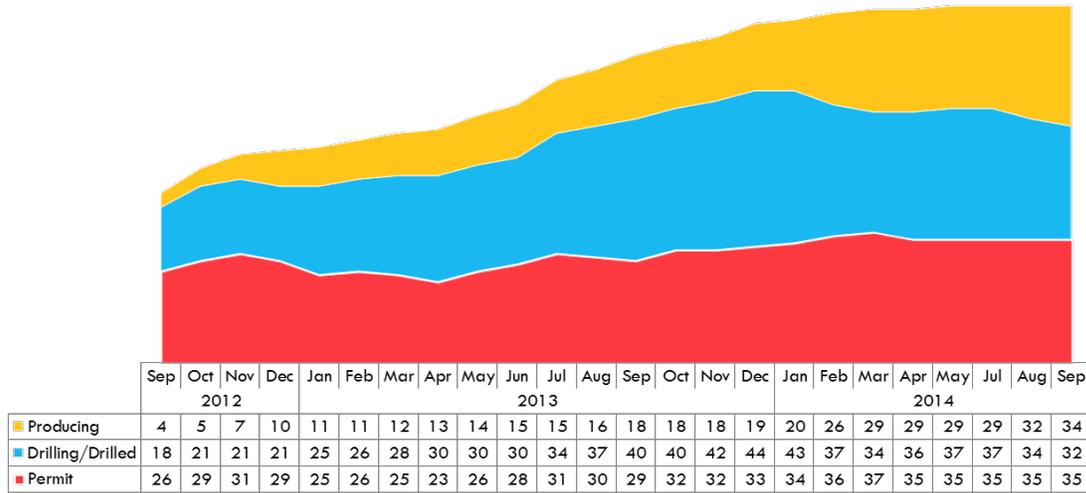
Columbiana

Gas and Oil Activity

Upstream

ODNR issued the first permit for drilling in Columbiana County in 2009, and noticeable activity began in 2012. As of September, 2014, 101 drilling permits had been issued. All but three of the permits were issued to Chesapeake Energy. Of the 101 permitted sites, 66 wells were being drilled or had already been drilled but were not yet producing gas or oil. An additional 34 drilled wells were producing gas or oil. Wells in Columbiana County moved into the production phase beginning in 2014.

Figure 5. Columbiana County Shale Well and Permit Status



Source: Ohio Department of Natural Resources RBDMS database

Midstream

Midstream activity has arrived in Columbiana County as well, including a cryogenic and fractionation plant in Kensington that forms part of the “Utica East Ohio Buckeye” network of gas fractionation plants and pipelines.¹¹

Housing Stock Prior to Shale Development

According to research participants, housing was already in short supply when the shale industry arrived in the area. The housing that was available was often of poor quality, especially in the southern part of the county. Of the 46,882 housing units in the county, 10 percent are vacant, and 36 percent were built prior to 1950.

Types of Housing Being Used by Shale Workers

The demand for short-term housing has partially been met by campgrounds and the rehabilitation and construction of hotels, especially in the northern part of the county. In the south and central part of the county, shale workers are frequently renting single-family dwellings. Landlords have been moving toward shorter-term leases of furnished rentals, at roughly twice the previous rental rates. The demand is so great that some landlords are reportedly renting out their units in shifts—so that one individual has a room for twelve hours a day, and another individual has the room for the other twelve hours in the day. A gas and oil company has also reportedly purchased an old hotel and renovated it into housing for workers.

¹¹ Bricker and Eckler. Edd Pritchard and Jon Baker (April 28, 2013), “Midstream is next step in Utica Shale development” CantonRep.com; www.marcellus-shale.us/ohio-gas-refineries.htm; <http://www.marcellus-shale.us/Kensington-Midstream.htm>

Impact on Rental Market

Rents have reportedly increased throughout the county, but perhaps especially in the north. Research participants noted that East Liverpool appears to have been hardest hit by the increased housing demand. Salem and Lisbon have also been affected.

The MHA reports that its Section 8 landlords are less willing to continue accepting vouchers, especially in the northern part of the county. Research participants report that fair market rents calculated by HUD are not commensurate with existing rental rates. FMR for a two-bedroom unit, for example, has increased from 609 to 645 dollars (5.9 percent) from 2011 to 2015. Agencies that can only provide clients with FMRs are finding that their clients cannot find housing in that range. As in other counties, the MHA expressed fear that its number of vouchers would be cut because they have not been able to find properties for their vouchers, and cited experiences in Lacombe County, Pennsylvania as evidence of this possibility. A complicating factor is the substandard nature of much of the housing stock. According to one social service worker: “If you can get the landlord to make fair market rent, the next big hurdle is: will it pass a housing inspection? Especially in the southern part of the county.”

In addition to the increase in rental prices, there has also been an increase in the size of the applicant pool for every rental unit. Renters with poor credit histories or criminal records are having great difficulty finding quality affordable housing. When asked what clients with felonies are doing for housing now, one case worker responded, “They end up renting off a landlord for a massive amount of money and then bouncing from house to house to house because they can’t afford this place for this month, or they pay their first month and then they go to the next place and so forth.”

Some social service workers report that there are pockets in the rental economy in which landlords are cooperating with service agencies. One counseling center reports that it has been successful in housing clients, while a mental health agency in the northern part of the county, and others who are running rapid rehousing and homeless prevention programs, report that their clients cannot locate affordable units. Social service agencies that provide residential treatment for drug and alcohol addiction also report that they cannot find places for their clients after they complete the program.

People with incomes that are just above the cut-offs for subsidized housing are also finding it difficult to locate habitable, affordable housing.

Impact on Homelessness

JFS case workers report that housing has always been a challenge for their clients. The practice of doubling up is not new, but families are now moving in with others to whom they are not related, as housing options become fewer. One caseworker reports that a family with four teenage children is currently living in one room of a house, while other families not related to them live in other rooms.

There is a small, short-term shelter in downtown Lisbon, but service providers report that it is normally full. Service agencies typically refer homeless individuals to shelters in Youngstown and Alliance. They noted that these shelters are increasingly full as overflow from Columbiana and other counties places stress on their resources. Social service workers report that hotels are full of shale workers, which has made it hard for them to use hotels as temporary housing for clients in emergency situations.

Impact on Home Sales

There are reportedly fewer homes on the market as homeowners decide to rent out their houses at the increased rent prices instead of selling the homes.

Community Needs and Strategies

To address the issue of substandard housing, the county has established a land bank. Over fifty properties reportedly have been taken down.

The county's community action agency has identified a need for more renter education, and has started a "Prepared and Educated Renters Training" program.

Participants identified a need for more housing stock and rehabilitation of existing stock. Despite the need for more housing, research participants reported that a developer attempting to build affordable housing in Salem was rebuffed by the community. JFS workers also identified a need for more resources for homeless clients. Columbiana County JFS is using PRC funds to help clients with housing problems. They are currently able to help with security deposits, but not with evictions. They report that there has not been a real change in demand on PRC funds, perhaps in part because having funds for security deposits does not change the fact that rents may be too high.

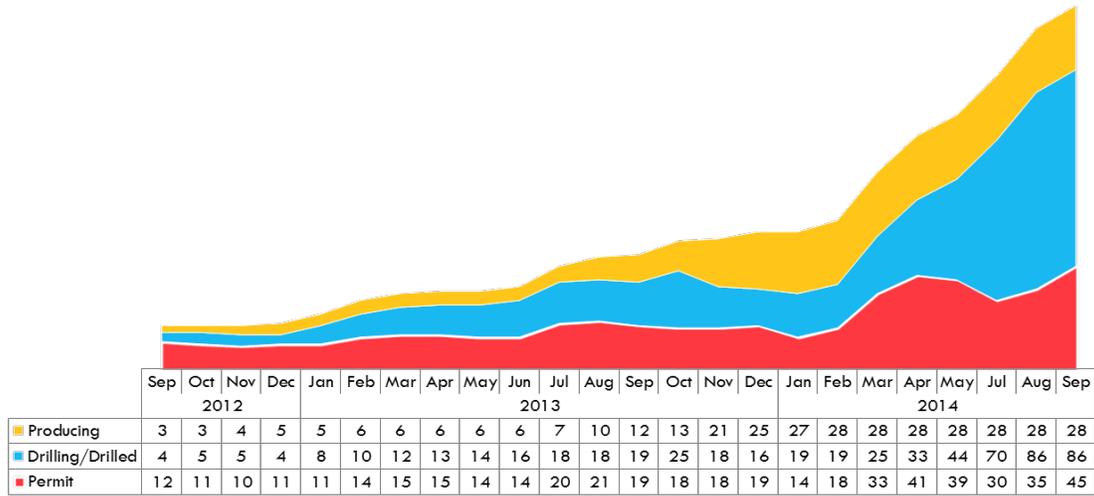
Guernsey

Gas and Oil Activity

Upstream

The first drilling permit for Guernsey County was issued in August, 2011. Drilling began on that site in the same month. By September, 2014, 159 permits had been issued. One hundred-fourteen wells had been drilled and 28 of those wells were producing gas or oil. There are a variety of companies currently drilling in Guernsey County.

Figure 6. Guernsey County Shale Well and Permit Status



Source: Ohio Department of Natural Resources RBDMS database

With the intersection of Interstate 70 and 77, Guernsey County has been an attractive county for environmental and engineering professional consulting companies moving into the region as part of the first phase of shale development. As observed in other counties, investments have been made to construct multiple hotels to address housing needs of transient drilling workers and technical consultants.

Midstream

Midstream activity has been slower to arrive in Guernsey compared to many other counties, though Ohio River Valley Pipeline has recently announced plans to develop a pipeline through Guernsey and Noble counties. This pipeline would transport light oil condensate out of the two counties. Six natural gas and condensation facilities are slated to be constructed as part of the project.¹²

Housing Stock Prior to Shale Development

Similar to other counties, Guernsey County has an older housing stock with 6,552 of its 19,091 housing units (34 percent) built prior to 1950. In addition, 26 percent are renter occupied units. Research participants agreed that there was sufficient housing stock for low-income individuals and families prior to the arrival of the gas and oil industry.

¹² Kate Snyder (January 21, 2015), “New pipeline will help transport oil to county,” *Zanesville Times Recorder*.

Types of Housing Being Used by Shale Workers

Shale workers are living in hotels (three recently built), renting homes and apartments, and living in formal and informal RV camps. Some townhouses have reportedly been built with oil and gas workers as target tenants. An assisted-living facility with available space has renovated rooms and leased them to gas and oil workers.

Impact on Rental Market

Guernsey is a county facing more dramatic increases in rental costs. This may be due to the presence of an increased number of gas and oil companies located along Interstate 77 than found in other locations in the region. This brings an influx of workers and increases competition for available housing. Landlords have responded to the increased demand by raising rents, including utilities in rents, and renting out homes by room. Research participants estimate that the monthly rent for a three-bedroom unit has risen from the 400-500 dollar range to about 1,200-1,500 dollars. Participants also reported that one-bedroom apartments are being advertised for 1,600 dollars a month. At least four new brokers have moved into the area.

So far, the MHA reports that Section 8 landlords have not stopped accepting Housing Choice Vouchers, though the housing authority expressed concern about the discrepancy between FMR and actual rental costs, and the impact that might have on future allocation of resources to the organization. FMR for a two-bedroom unit has risen by 6.4 percent between 2011 and 2015 (from 596 to 634 dollars).

Many seniors who are still able to live independently are nonetheless having to move in to nursing homes or move in with families because of the rising rental costs. Some service providers report that clients are moving to Muskingum County, where they can secure rentals for roughly 500 dollars a month. The Developmental Disabilities Board in the county reports that a small number of landlords in the area have remained willing to work with clients, though overall it is very difficult to find affordable housing for individuals with developmental disabilities.

Impact on Homelessness

According to social service agencies, evictions are on the rise and more families are having to leave their homes because of inability to afford rising rents. One social service provider reported, "It's not that [clients] aren't paying rent now. Most of the time it's that rent has gone so far. We just had a family—both parents have worked, they have two small children, Dad's been at the same job for eight or nine years, but rent went up from 550 to 1,500." GMN Tri-County CAC, Inc. had funds to help with eviction cases, but funds were quickly depleted for the year.

Advocates for crime victims report that it is increasingly hard to place clients in new housing and that the local homeless shelter (The Samaritan Center) is typically full. Stays in shelters are becoming longer. A veterans group reported that about one year ago it had to begin sending homeless clients to Newark, because they could not find housing or shelter in the local community. Research participants note that many shelters are intended for families, and "if you

don't have kids you're pretty much out of the game in Guernsey County...We'd like to see people not have to go down to the Salvation Army or break into houses or sleep under bridges.”

Hotel costs have also risen, so that even when rooms are available, they are not affordable to service providers trying to house clients in an emergency situation.

Impact on Home Sales

Single-family homes that may have been sitting on the market prior to the arrival of the shale workers are now selling. Some renters are turning to banks for mortgage approval in the hopes of securing mortgages that are more reasonable than their increased rents. It is reportedly becoming more difficult to purchase a home in the 150,000-200,000 dollar range because they are in high demand. There is some evidence that some longer-term industry workers are beginning to purchase homes. One source knowledgeable about the home buying market indicates that most industry executives looking for homes are earning salaries in the 200,000 dollar and above range.

Community Needs and Strategies

Research participants stressed the need for more moderate- to low-income housing, and better resources for the homeless.

The MHA reported that it is gathering information to present to HUD, in the hopes of making it clear that the fair market rents are not sufficient for the current rental market in the county.

Guernsey County is currently participating in a planning process facilitated by The Ohio State University Extension, which seeks to formulate action steps to address the impact of gas and oil in the region. The effort includes a housing subcommittee for the county, as well as a philanthropy subcommittee that is focusing on wealth retention to help mitigate the impact of the gas and oil industry.

Research participants expressed a desire for a land bank to address the need for rehabilitation and new construction, but noted that the county's population does not meet the 60,000-person population requirement.

Participants also indicated a need for more collaboration between communities and the gas and oil industry, in order to address infrastructure needs beyond roadways, especially the need for sewer and water lines. Addressing those needs would help the community overcome some of the barriers to affordable housing development.

Several research participants recommended establishing a consortium of Community Reinvestment Act required institutions to examine ways to address housing and other community impacts from a regional perspective.

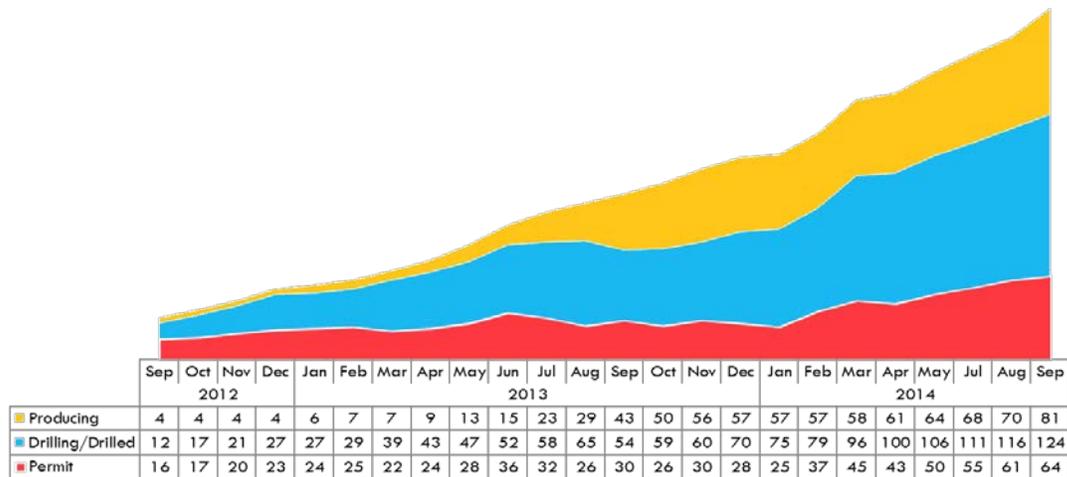
Harrison

Gas and Oil Activity

Upstream

ODNR issued the first permit in Harrison County to Chesapeake Energy in 2010. By September, 2014, 269 permits had been issued to drill on land in Harrison County. Of those 269 permits, 205 sites had been drilled and 81 of the sites were producing gas or oil. Harrison County has experienced a steady increase in the amount of drilling activity over the past few years.

Figure 7. Harrison County Shale Well and Permit Status



Source: Ohio Department of Natural Resources RBDMS database

Midstream

In addition to drilling activity, Harrison County is the location of a portfolio of midstream operations. Most notably, MarkWest has constructed a fractionator and liquid natural gas gathering system, including a de-ethanization facility. Momentum Midstream has also announced plans to increase activity in its fractionation plant in Scio.¹³ Because of these facilities' locations in Harrison County, many miles of pipeline have been constructed in order to transport the product from well sites to the facility.

Housing Stock Prior to Shale Development

¹³ <http://investor.markwest.com/phoenix.zhtml?c=135034&p=irol-newsArticle&ID=1754730>; Dan Shingler (June 6, 2014), "MarkWest announces expansion of Harrison County processing plant," *Crain's Cleveland Business*, <http://www.craainscleveland.com/article/20140606/FREE/140609856/markwest-announces-expansion-of-harrison-county-processing-plant>

Research participants agreed that the size of the housing stock was adequate before the arrival of the shale industry in Harrison County, but noted that much of this housing was substandard.

As displayed in Table 6, 3,341 housing units, or 41 percent of the housing stock, was built before 1950. Harrison County has an estimated 1,714 vacant housing units.

Types of Housing Being Used by Shale Workers

Workers are living in RVs on campgrounds and on land leased from locals. Workers are also living in hotels (three of which have been constructed recently). There are also reports that gas and oil companies are purchasing homes and renting to workers. There has also been an increase in investor-landlords, who are buying multiple units in order to rent them out. These units tend to be single-family homes.

Impact on Rental Market

Research participants estimate that the current monthly rent for apartments that used to cost 500 dollars is now roughly 900-1,200 dollars. Some research participants estimate that landlords are charging roughly 700 dollars per bedroom per month for single-family homes. In contrast, FMR for a two-bedroom unit has increased by 6.4 percent from 2011 to 2015 (from 596 to 634 dollars), despite the much larger increase in rents in the county. Housing Choice Vouchers are going unused as clients have great difficulty finding HUD-approved units in the appropriate price range. Prior to shale development, almost all vouchers were consistently in use. The MHA reports that some of its landlords have declined to renew leases of tenants using vouchers, though it characterizes this as a slight decrease in landlords' willingness to accept vouchers. The MHA has increased its payment standards to 109 percent in an attempt to remain competitive and can now serve a maximum of 200 clients instead of the 265 clients they would normally place. According to the MHA, "Our voucher program is taking a pretty big hit."

There are reports that many landlords are now targeting only gas and oil workers as potential tenants, and that some landlords vary the prices they charge depending on whether the renter is a local resident or is a part of the gas and oil industry. Landlords are including utilities, towels and linens, furniture, and even cleaning services in many leases. Local investors and investors from outside the community are purchasing rental properties.

Seniors and individuals/families with low incomes are being negatively impacted by these developments. Some research participants indicated that young families are in a more precarious position than seniors because there has traditionally been a safety net for seniors in the Harrison County.

Impact on Homelessness

There are no shelters in the county and social service agencies are finding it necessary to refer clients out of county to Jefferson and Tuscarawas counties, though shelters in those counties often have waiting lists. This is a marked difference from two years ago, when social service agencies were not having to send clients out of county. Often, local churches would put up families in hotels on a temporary basis, but now no hotel rooms are available.

One caseworker reports receiving two to three calls related to emergency housing needs a day. One family on her caseload—two parents and three children—were sleeping in their car, because there was no immediate shelter for them or available housing. Harcatus Tri-County has been able to provide back rent for clients with eviction notices in order to prevent homelessness, and to pay a first month's rent and deposit for those who are currently homeless, but these forms of assistance are for very-low income individuals and do not address the ongoing need to meet significantly increased monthly rental payments.

There does appear to be a small group of landlords that remain willing to work with the Homeless Crisis Response Program, but there tend to be very few openings among these landlords.

Impact on Home Sales

There has been an increase in home purchasing as landlords and some investors buy property to increase their rental portfolios. There were also some reports that energy companies were purchasing single-family homes and renting them to their employees. Property values are reportedly increasing as well.

Community Needs and Strategies

Participants identified a need for more affordable housing, but there are mixed opinions in the community about whether to develop in response to the increased demand, or whether to wait out the gas and oil industry. Those who advocate for development have suggested that mixing affordable and market-rate housing is probably the best strategy. Some participants indicated that there is a need for better infrastructure (in particular water and sewer) in order to meet housing needs.

Participants also noted that there has been a cultural shift among service agencies, as the increased strain on their resources has led to much more collaboration than in the past. They stress the need for this coordination to continue.

Some participants identified a need for increased education about renter rights and responsibilities. There is also agreement that there is a need for more locally available shelter options for the homeless.

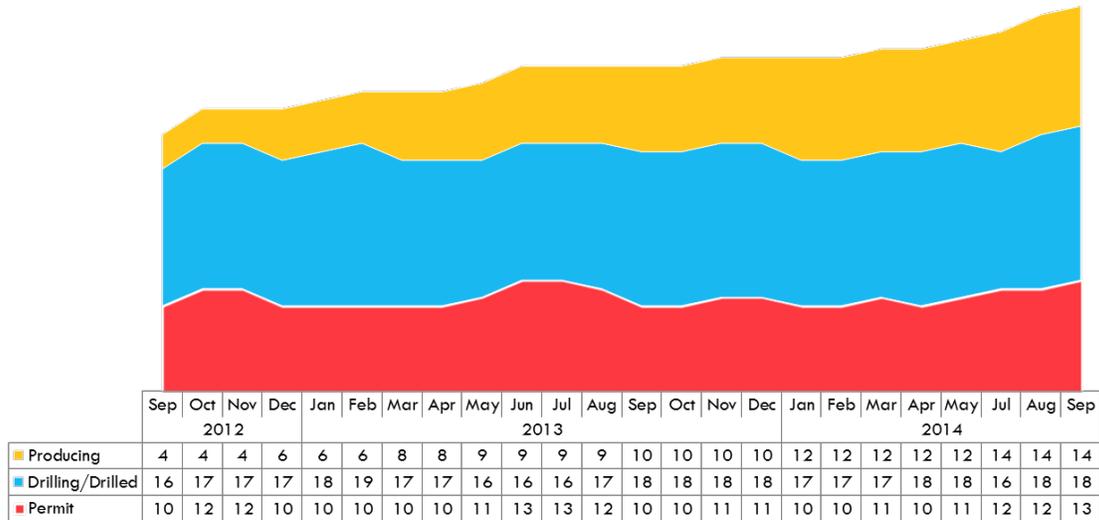
Jefferson

Gas and Oil Activity

Upstream

The first permits were issued in Jefferson County in 2009 and 2010. By September 2014, 45 permits had been issued. Of those, drilling has occurred at 32 sites, and 14 wells are producing gas or oil.

Figure 8. Jefferson County Shale Well and Permit Status



Source: Ohio Department of Natural Resources RBDMS database

Jefferson County once had a robust industrial-based economy composed of steel and fabricated metal manufacturing companies. Since the 1980s, the county’s economy has continued to decline as U.S. steel manufacturing was outsourced to other countries. However, increased drilling activity in the region has created a new need for customized metal components. Drilling companies have been able to source supplies locally through small- and medium-sized manufacturers located in Jefferson County.

Midstream

It was announced at the end of 2014 that a former steel mill sitting along the Ohio River will be transformed into a transportation and logistics hub moving supplies and product in and out of the shale region.¹⁴

Housing Stock Prior to Shale Development

Research participants concurred that the housing stock in Jefferson County was largely aging and substandard when shale workers began arriving roughly two years ago. Thirty-six percent of Jefferson County’s housing stock was built prior to 1950. Twenty-seven percent of the county’s 32,689 units are renter occupied.

¹⁴ Bricker & Eckler

Types of Housing Being Used by Shale Workers

Some participants reported that shale workers expressed dissatisfaction with the quality of housing available to them upon their arrival. Perhaps for this reason, shale workers appear to be favoring hotels and campers. There were some reports that a smaller number of shale workers are renting single-family homes. Lack of zoning has also allowed commercial buildings to be converted into residential properties for gas and oil workers. Drilling companies reportedly approached county officials about creating a congregate housing camp in the county's industrial park, but were not successful in obtaining permission.

Impact on Rental Market

Despite the fact that some of the need for housing has been met by hotels, campgrounds, and renovated commercial properties, participants report that increased housing demand has driven up rental prices to the point that some long-time renters are having to leave their homes. The most commonly cited scale of increase was from 450 dollars to 1,200 dollars per month for three-bedroom rentals (when landlords began renting houses out by room). One JFS caseworker described a steep increase in rent: "It's time for [my client] to renew her lease, and all of a sudden her rent went from 450 to 1,200 dollars a month. She can't afford that... Boom. She's homeless with three kids." Some research participants also indicated that low-income renters are now living in much poorer living conditions, when they are able to find an affordable rental at all.

Service agency representatives did not report that it has become harder to find housing for seniors, but those who serve the disabled and the mentally ill report difficulty locating suitable rentals for less than 1,200 or 1,300 dollars a month. Children Services also report problems finding homes for youth who are aging out of the foster system.

The MHA in the county reports that Housing Choice Vouchers are expiring before prospective tenants can find suitable rentals, especially when looking for one- or two-bedroom rentals. The FMR for two-bedroom units has increased by 10.1 percent between 2011 and 2015 (from 596 to 656 dollars), but this does not compare favorably to the doubling or tripling of rents that many are reporting.

Research participants report a rise in unconventional landlord-tenant relationships (staying in run-down properties in return for fixing them up, for example).

Impact on Homelessness

Service agencies report an increase in eviction of families in favor of gas and oil workers, and many research participants report an increase in couch surfing and doubling-up. Food banks have reported to service agencies that the number of people in the households they serve is on the rise as households grow to include multiple generations of a single family and/or multiple families. Homeless shelters in the county appear to be serving residents of neighboring counties, especially Carroll and Harrison, as well. A second homeless shelter has been opened by Urban Mission.

Impact on Home Sales

Research participants report that there is a decent supply of homes for sale, but that many of these are in disrepair and are in locations considered undesirable or unsafe. Young, first-time homebuyers are having difficulty finding appropriate, affordable homes.

Community Needs and Strategies

Research participants identified a need for transitional housing, particularly supportive housing, and an overall need for an increase in the housing stock, especially for low-income individuals and families. In addition, research participants expressed the desire for capacity building and other training to encourage community members to be more engaged in non-profit board of director positions.

Assistance is currently available from Jefferson County PRC funds (for clients facing evictions) and Jefferson County Community Action is providing other forms of rental assistance.

In response to the need for more housing, the county has taken the initial steps to start a land bank, in the hopes of facilitating new development and the rehabilitation of existing housing. Rehabilitation of 78 units in Steubenville has reportedly already taken place. The county's Port Authority has recently been contacted by a housing developer expressing interest in the area.

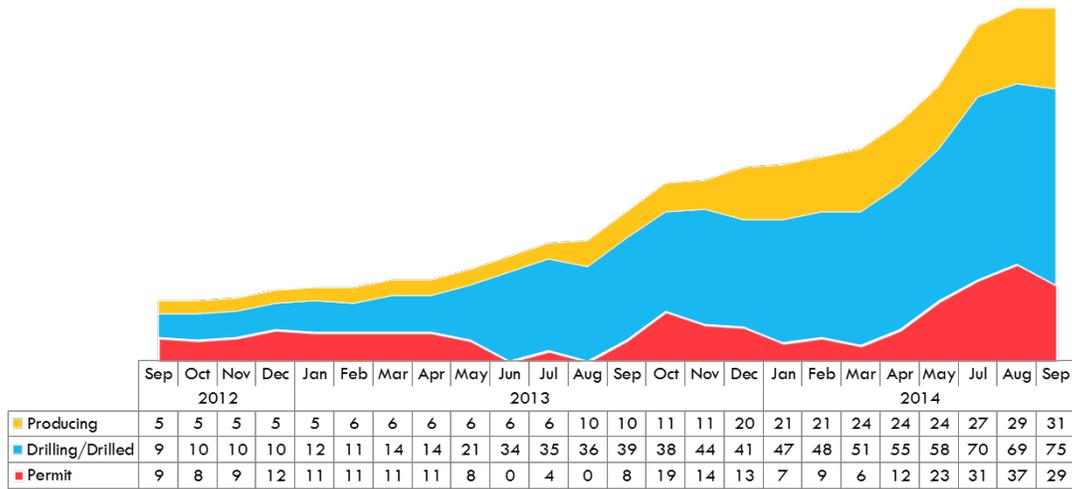
Monroe

Gas and Oil Activity

Upstream

Drilling activity in Monroe County increased rapidly in 2014. By September, ODNR had issued 135 drilling permits for sites located in Monroe County. Of those, 106 had been drilled and 31 wells were producing gas or oil.

Figure 9. Monroe County Shale Well and Permit Status



Source: Ohio Department of Natural Resources RBDMS database

Midstream

In 2014, Appalachian Resins Inc. announced its intention to build an ethane cracker plant in Monroe County to source material for the region’s polymer companies.¹⁵ The company has leased land and will bring construction workers to the area. When fully operational in 2019, it is estimated that it will employ up to 200 workers. Blue Racer Midstream also has plans for fractionation and cryogenic plants in the county.¹⁶

Housing Stock Prior to Shale Development

Research participants reported that there was an adequate supply of housing prior to shale development. It is estimated that Monroe County’s housing vacancy rate is 18.8 percent, and 37 percent of Monroe County’s housing was built before 1950.¹⁷

Types of Housing Being Used by Shale Workers

As in other small counties, shale workers are renting homes and living in RVs in informal campgrounds. Some research participants noted that drilling and pipeline workers in Monroe County are commuting from hotels in Marietta and neighboring county fairground campsites.

¹⁵ Appalachian Resins

¹⁶ Bricker & Eckler; <http://www.blueracermidstream.com/>

¹⁷ U.S. Census Bureau, 2009-2013 American Community Survey 5-year estimates

Impact on Rental Market

Some research participants reported that there had not yet been any significant impact on housing in the county, saying “It’s kind of early to tell what the effect is going to be...It’s changing daily.” One head of a social service agency declined to participate in the research process, explaining that the housing situation had not been impacted in the county.

The housing authority that serves Guernsey, Noble, and Monroe counties reported that voucher utilization has remained largely unaffected by the arrival of shale workers, and that Section 8 landlords continue to accept vouchers.

Nonetheless, many participants reported that there is an increased demand for short-term housing and that landlords are responding by accepting short term leases, furnishing apartments, renting houses by room, and increasing rental prices. The local Developmental Disabilities Board reports that it is increasingly hard for its clients with developmental disabilities to find affordable housing.

One broker noted that rent for one dwelling increased dramatically: “On Saturday before the house sold [the tenant] was paying 350 dollars a month, and the guy that moved in on Wednesday after the house was sold was paying 1,200 dollars a month.” Another participant said that it was not uncommon to see a three-bedroom home being rented for 1,800 or 2,000 dollars a month. In contrast, the 2014 FMR for a three-bedroom unit was 765 dollars a month.

Impact on Homelessness

Service providers reported that they are seeing an increase in evictions among their clients, and that they attribute this increase to a desire to move out families and move in oil and gas workers who can pay higher rents.

Impact on Home Sales

One realtor from the area noted that there was an initial freeze in land sales, as owners waited to see what impact shale development would have on the area, but now land is beginning to come back on the market. The same realtor reported that banks are now more willing to provide home mortgage loans, as the community begins to deposit more and more money in local banks. He also reported that the longer-term workers who have come into the area have begun to purchase homes.

As a result, home sales have reportedly increased slightly, though not dramatically, and participants report that the majority of buyers are purchasing homes in order to make them rentals. Homes in the 150,000 dollar and below range are moving very quickly, and first-time homebuyers are getting lower quality homes than they would have several years ago. One research participant in the home lending industry predicted that it would become increasingly difficult for homebuyers to find homes in the 125,000-150,000 dollar range that were decent enough to live in.

Community Needs and Strategies

Monroe County does not appear to be fully engaged in an effort to identify needs and strategies regarding the housing impact of shale development in the area. One participant did suggest that there is a need for assistance for first time homebuyers as they are increasingly forced into buying homes in need of repair or rehabilitation. The same participant suggested a need for homeowner education, as well as renter education.

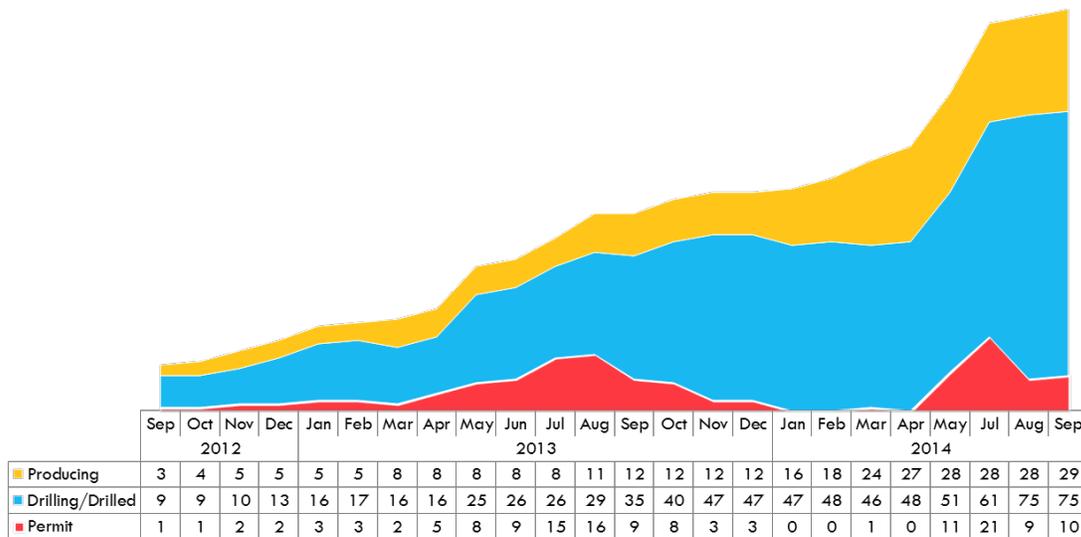
Noble

Gas and Oil Activity

Upstream

ODNR issued the first drilling permit for land in Noble County in 2011, and drilling activity accelerated rapidly in 2014. As of September 2014, 114 total permits had been granted to drill in Noble County. Of those 114 permits, 104 of the sites had been drilled or were in the process of being drilled, and 29 of the wells were producing gas or oil. More drilling activity occurred in Noble County in 2014 than any other county. Antero Resources has secured the bulk of permits and conducted most drilling in the county.

Figure 10. Noble County Shale Well and Permit Status



Source: Ohio Department of Natural Resources RBDMS database

Midstream

Noble County is home to a MarkWest natural gas processing plant as well as three cryogenic gas-processing facilities located in Summerfield.¹⁸

Housing Stock Prior to Shale Development

Some participants reported that housing and homelessness has always been a problem for the county, and that, “We have always had people that are struggling with finding housing that they can afford. That was prior to anyone moving in, as far as the oil and gas, so that’s always been an issue.” Of the counties under study, Noble County has the lowest vacancy rate (10 percent) and percentage of renter occupied units (19.7 percent). Thirty-six percent of housing units in the county were built prior to 1950.

Types of Housing Being Used by Shale Workers

The first wave of housing demand is being met primarily by campsites, rentals, and new hotels. One participant who is working with interested hotel developers reported: “We could potentially have six hotels in Noble County the next 18 months.” To meet the increased housing need, many people are renting space on their properties for campers. Commercial space in Caldwell has been converted into housing for shale workers, and companies have also purchased homes in the Caldwell area. Because Noble County does not have zoning laws restricting development, informal housing options are common.

Impact on Rental Market

Research participants report mixed impacts on the rental market. While most participants reported that rental prices have increased dramatically, a few participants reported that some landlords have reportedly chosen not to increase prices by much. While these rentals in the lower price ranges are still available, they do not become available frequently and move very quickly when they do.

One research participant reported that rents have increased from five or 500-600 dollars a month to 1,000-1,300 dollars a month. Landlords are also accepting lease terms that are significantly shorter than prior lease terms. Prospective renters with poor credit history, criminal records, or other features unattractive to landlords are finding it harder to secure rentals. One service provider who serves elderly clients reported that seniors are having to rent properties that are less maintained in order to stay within their price range.

Research participants noted that individuals and families with modest incomes are being affected, because rents are rising out of their price range, but they are not eligible for any assistance. Individuals with developmental disabilities and veterans are also reportedly being adversely affected by rising rental prices. Nonetheless, the housing authority whose service area includes Noble County reported that HCV utilization remains fairly steady. The FMR for a two-bedroom unit has increased by 6.4 percent between 2011 and 2015 (from 596 to 634 dollars).

¹⁸ <http://www.businesswire.com/news/home/20130530006668/en/MarkWest-Utica-EMG-Expands-Utica-Shale-Midstream#.VLOIISeczOo>

Impact on Homelessness

Evictions are reportedly on the rise and doubling up and couch surfing are common. One service provider reported seeing more “county hopping” as people move from county to county in search of affordable rents or places to stay.

A local motel is no longer keeping a room available for emergency referrals from social service agencies, since the motel is full of gas and oil workers. When social service agencies have clients who need emergency housing they are now sending them to Cambridge, Marietta, or Bellaire.

Impact on Home Sales

Marketing times for homes for sale have reportedly decreased from 60-90 days to 30-45 days. Homes in the 125,000-200,000 dollar range are moving quickly. Fewer houses are for sale, as homeowners decide to rent their properties rather than sell.

Individuals with poor credit scores are having a hard time securing housing, despite the fact that mortgage payments on a house may be much less than rents for much smaller rental units.

Community Needs and Strategies

Participants identified a need for both new development and rehabilitation, and stressed the need for more affordable housing for families and for seniors. Low-income housing in the county, located in Caldwell, was reportedly oversubscribed even prior to the arrival of the shale industry. There is reportedly a two-year wait list for senior housing in the county. They also indicated a need for a homeless shelter. Participants suggested that new development should be scattered-site (and identified recent developments in Morgan County as an example), because multi-family structures are more difficult to rent in the area. Some participants noted that lack of existing water and wastewater infrastructure may hinder potential new development.

Another need identified by research participants was for renter education about the rights and responsibilities of renters, as well as home owner education and credit remediation.

Table 4. Summary of Individual County Information

	Belmont County	Carroll County	Columbiana County	Guernsey County	Harrison County	Jefferson County	Monroe County	Noble County
Condition of housing stock prior to arrival of shale industry	Aging, with many substandard units	Sufficient housing available	Inadequate and substandard	Sufficient housing available	Available but substandard	Substandard	Sufficient housing available	Inadequate
Types of residences being used by temporary shale workers	Hotels; RVs; single-family dwellings; apartments	Hotels; RVs; rental units (including single rooms in rental units)	Hotels; RVs; rental units	Hotels; rental units; RVs	RVs; campgrounds; hotels; rental units	Hotels; RVs; rental units	RVs	RVs; single-family homes; renovated commercial spaces; hotels
Impact on rental market	Reported doubling of rents for single-family units; HCV underutilized	Reported doubling to tripling of typical rents; real estate market becoming more formalized	Reported doubling of typical rents; HCVs underutilized; Section 8 landlords less willing to accept vouchers	Reported tripling of typical rents	Reported doubling of typical rents; slight decrease in landlord Section 8 participation; decrease in HCV utilization	Reported tripling of typical rents; HCVs underutilized; spike in rental rates appears to be tapering off, though available low-cost housing located in high crime areas only	Reported tripling of typical rents; increase in evictions; HCV utilization remains steady	Reported doubling in typical rents; HCV utilization remains steady

Table 4. Summary of County Information continued

	Belmont County	Carroll County	Columbiana County	Guernsey County	Harrison County	Jefferson County	Monroe County	Noble County
Impact on home-buying market	Increased demand for homes; homes \$150,000 or below selling quickly	Home prices and land prices increasing; some home owners choosing to rent out their homes rather than sell	Fewer homes available for purchase	Homes in \$150,000-200,000 range becoming scarcer; some renters turning to buying as more affordable option	Increase in home purchases; some landlords buying homes to increase rental portfolio; some energy companies reportedly buying homes to rent to employees	First-time homebuyers having trouble finding housing of sufficient quality within their price range	Homes in the \$125,000-150,000 growing scarce; increase in home sales as buyers seek investment properties	Decreased time on market, especially in the \$125,000-200,000 price range; increasing challenges for first-time homebuyers
Impacted populations	Low-income and middle-income families; first-time homebuyers; homeless	Low-income; seniors; homeless	Low-income; those just above income cutoffs for housing subsidies; persons with developmental disabilities; homeless	Low-income; seniors; veterans; crime victims; first-time homebuyers; homeless	Low-income; seniors; homeless	Low-income; first-time homebuyers; mentally ill; homeless	First-time homebuyers	Low- and middle-income; veterans; disabled; seniors; first-time homebuyers

Table 4. Summary of County Information continued

	Belmont County	Carroll County	Columbiana County	Guernsey County	Harrison County	Jefferson County	Monroe County	Noble County
Needs identified by community	New construction; rehabilitation; homebuyer assistance; more resources for homeless; renter education	New construction; rehabilitation; a housing authority or other body to organize the response to the gas and oil industry; homeless shelter	New construction; rehabilitation; more resources for homeless; renter education	New construction; rehabilitation; homebuyer assistance; more resources for homeless	New construction; mixed development; more resources for homeless; renter education	New construction; rehabilitation; homebuyer assistance; more resources for homeless; transitional housing	Homebuyer assistance; renter education	New construction (including for seniors); rehabilitation; homebuyer assistance; more resources for homeless; renter education
Current strategies being undertaken	Land banking	Information gathering by Family and Children First Council; DJFS has changed PRC program to increase available rental assistance	Renter education program; land bank recently established	Planning process facilitated by OSU Extension; information gathering by MHA	Increased collaboration across service agencies; MHA has increased payment standard	Establishment of land bank underway; rehabilitation underway	MHA collecting data on rent burden to demonstrate increased need to HUD	MHA collecting data on rent burden to demonstrate increased need to HUD

Other impacted counties

Tuscarawas

Research participants indicated that Tuscarawas was also starting to see an increase in rents and landlords were beginning to rent out houses by the room. Shale workers reportedly prefer to live in Tuscarawas, compared to neighboring counties, because of the amenities available there.

The homeless shelter in Tuscarawas County appears to be bearing the brunt of the homeless problem in neighboring counties as well as its own. This is even more so because the shelter in Jefferson County allows only one-night stays, and the Urban Mission allows only families, leaving the Tuscarawas shelter to absorb the population of homeless individuals (non-families) from other counties, as well as all those in need of more than one night of shelter.

Washington

Many of the same changes appear to be going on in Washington County. Shale workers have arrived and are living in newly built hotels or in RVs. Rental prices are increasing and some landlords who once accepted Housing Choice Vouchers are instead choosing to rent to gas and oil workers at higher rents. Rental agencies have begun purchasing homes. While the size of the housing stock appears to be adequate, the rising price of renting means that low-income individuals and families are struggling to find affordable places to live. Despite this, there still appears to be available housing for individuals with developmental disabilities and seniors.

Discussion: Housing Impacts in the Target Region

Upstream impact (short-term housing demand)

The increase in demand for rentals caused by the arrival of the upstream phase of the gas and oil industry has driven up the cost of rentals, making it harder for individuals and families with low-incomes to find suitable housing, and placing stress on service agencies that are trying to house low-income, senior, mentally ill, disabled, or homeless clients. Many research participants report that the working poor are also being adversely affected by the changes in the rental market.

Adequacy of Existing Housing Stock

- Local entrepreneurs and private companies have built hotels as well as formal and informal campgrounds and RV parks as ways to mitigate housing shortages for transient workers. While this has alleviated some of the pressure on the rental market, it has not been enough to maintain ample affordable housing for residents.
- Participants in Belmont, Columbiana, Guernsey, Jefferson, and Noble counties indicated a need for rehabilitation of the housing stock, and participants in all counties reported that there is a need for development of new affordable housing stock.
- Belmont, Columbiana, and Jefferson counties, the only counties in the target area that meet the program's minimum population requirement, have established land bank programs to rehabilitate dilapidated housing stock. Other counties, Guernsey County in particular, expressed a desire for a change to land bank regulations so that less populous counties can make use of the resource.

Rent Increases

- Research participants in all counties estimate that rents for one-, two-, and three-bedroom units have at least doubled. In Guernsey, Jefferson, and Monroe counties, participants estimate that rents have tripled.
- MHAs in Belmont, Carroll, Columbiana, Harrison, and Jefferson counties report that Housing Choice Vouchers are being underutilized because of the discrepancy between FMR and the actual rents that are being charged by area landlords.
- Participants from Belmont, Columbiana, Harrison, and Noble counties report that residents would benefit from education about renters' rights and responsibilities in order to better cope with changes to the rental market.

Home Buying

- In Belmont, Guernsey, Jefferson, Monroe, and Noble counties, escalating rental prices have made it more economically feasible for some people to buy a home, when compared to the cost of renting one.

- At the same time, first time home buying is increasingly difficult in these counties as homes in the 100,000-150,000 dollar range move very quickly, and potential buyers have to settle for lower-quality housing that they may not be able to maintain. This was specifically mentioned by respondents from Belmont, Columbiana, Guernsey, Jefferson, Monroe, and Noble counties.

Growing Homelessness

- Guernsey and Harrison counties especially are experiencing serious problems with homelessness, in part due to the lack of shelters in the area. Participants from Belmont, Carroll, Columbiana, Guernsey, Harrison, Jefferson, and Noble counties all expressed a need for more resources for the homeless in their counties.
- Jefferson and Tuscarawas County shelters appear to be absorbing the homeless populations from other counties. A new shelter in Jefferson County has been opened, although more beds are needed throughout the region to keep pace with demand.
- Agencies providing emergency housing to residents have fewer options. Historically, in most communities, local hotels have reserved a small number of rooms for emergency situations. However, these rooms are reportedly now filled with gas and oil workers.

Challenges for Communities Responding to Upstream Impacts

There is a lack of clear information about the trajectory of shale development in the area.

Research participants from all counties expressed uncertainty over whether wells will be as productive as predicted, and whether fluctuations in the price of natural gas will alter the tempo of production or stop production altogether.

There is mixed opinion about the advisability of further development, despite agreement on the current need for housing, for fear of creating housing that will not be needed after shale development. There is concern that any type of development undertaken now will not be appropriate for the communities' long-term needs, and that the community will be responsible for unneeded housing after the gas and oil industry leaves the area.

Midstream and downstream impacts

The counties under study have not yet fully entered into the second phase of development, though processing facilities have been established in several counties. **Belmont, Harrison, and Noble counties in particular seem to have the most midstream activity to date.** Carroll, Columbiana and Monroe have, to a lesser extent, seen some midstream activity also. There are indications that some midstream activity will be arriving in Guernsey and Jefferson counties as well, so it appears that the impact of the industry on all the target counties will continue.

There is already some evidence that home prices are increasing, though this is in part a result of owner-occupied dwellings being converted into rentals to meet the demand caused by the first wave of development. Gas and oil company workers in management positions have also reportedly been looking for housing in some areas. **It seems likely that assistance to individuals**

and families who want to become homeowners will become increasingly necessary. This would include education and credit remediation in preparation for home buying.

As is the case with upstream development, planning for the next phase of impact is made difficult by a lack of information about the industry's plans for the area. As one research participant reported, "They really don't spell it out...We can't plan because they are so noncommittal." In short, there is deep uncertainty about the trajectory of the industry in the target counties.

Recommendations

The following recommendations were either made directly by research participants, or were derived from the information provided by research participants. These recommendations are directed to housing stakeholders operating at all levels, from local to federal, and to the gas and oil industry. Because of the interdependent nature of many of the issues related to affordable housing development, researchers felt that it was important to provide an overall picture of the steps that need to be taken by multiple actors in order to successfully tackle such a difficult challenge. Starred items are suggestions that could be carried out by OHFA.

Federal Level

HUD Fair Market Rents

Research participants were very clear that HUD Fair Market Rents—which are not highly sensitive to sudden change in the market—are set far too low for areas impacted by gas and oil development. In a recent publication, HUD reported, “In areas affected by steep rent increases, such as oil- and gas-impacted areas, the difference between the charged rent and the subsidy may be so high that the Housing Choice Vouchers (HCVs) cannot be used effectively.¹⁹ Several agencies in the study area are collecting data in an attempt to illustrate for HUD the recent dramatic changes in local housing markets.²⁰

Increasing HUD Fair Market Rents is not a new suggestion. This discrepancy between FMR and actual rental rates in shale-affected areas was identified in Pennsylvania, and an increase in FMR was suggested by the Housing Alliance of Pennsylvania, among others.²¹ This strategy has the added benefit of using existing housing stock, instead of creating a potential future housing glut.

FMRs also influence organizations beyond housing authorities. Any service agency whose funding specifies that clients cannot receive rental assistance in excess of FMRs is finding it more and more challenging to serve clients in need of housing.

¹⁹ S. Komadina, T. McNally, S. Young (March, 2014). Impact of oil and gas exploration on affordable housing. Economic Market Analysis Working Paper Series. U.S. Department of Housing and Urban Development, Office of Policy Development and Research.

²⁰ Housing authorities can petition HUD for emergency exception payment standards that allow agencies to increase the amount of the subsidy provided to families. However, this does not change the total amount of funds that HUD provides the housing authority. While HCVs may once again become usable, overall there is a smaller number of HCVs available to families.

²¹ Housing Alliance of Pennsylvania. *Increase HUD Fair Market Rent in Shale Areas: Recommendation from Housing Alliance of Pennsylvania in Testimony.*

State Level

Land banks and rehabilitation

Belmont, Columbiana, and Jefferson counties have all developed land banks in order to address the growing need to rehabilitate housing stock, but the age and decrepitude of housing stock throughout the entire region remains a challenge. Before the recent increased demand for housing due to the shale industry, over a third of housing units in all counties were built before 1950.²² However, only Belmont, Columbiana, and Jefferson counties have the minimum population of 60,000 people required to start a land bank.

Policy changes that allow rural counties to pool their populations in order to meet requirements might give the impacted counties a new tool with which to address the increased demand on their aging housing stocks.

Homebuyer Assistance*

Escalating rental prices have encouraged some residents in the region to consider purchasing homes for the first time, even as home prices are increasing along with rental prices. First-time homebuyers could benefit from educational and financial assistance. Programs that help with down payments, provide low interest loans, assist with rehabilitation and repair, and well as programs that provide credit remediation and education about homeownership were most desired by research participants.

OHFA's First Time Homebuyers Program could be used to address this need. USDA's Single Family Housing Direct Home Loans might also be of use for these purposes. In this case of the First Time Homebuyers Program, it might be necessary for banks in more rural areas to become OHFA-participating lenders in order to increase residents' access to this program.

The areas identified by research participants in which need for this type of assistance is greatest include: Belmont, Guernsey, Jefferson, Monroe, and Noble counties.

Funding for Development*

Stakeholders from all counties clearly expressed a need for more affordable housing. In areas where the community decides that building new housing would be a viable long-term strategy, incentives such as preferential allocation of tax credits could help bring needed housing to the region.

Specific areas in which research participants identified a need for new development include: Bellaire, Caldwell, Cambridge, Carrollton, Salem, East Liverpool, St. Clairsville, and Steubenville.

²² U.S. Census 2000, SF3, H034

Some participants also expressed a desire for affordable housing in Monroe and Noble counties outside of Caldwell and Woodsfield.²³

It should be noted that developers have cited challenges with building new affordable housing in this rural region with a small market base. Further layering of subsidies in order to make development deals desirable should be pursued as well. Further incentives and innovative interagency partnerships should be explored to attract developers to invest in this distressed area. Suggested approaches to encourage development are included in this section.

Nonmonetary Development Assistance*

Research participants expressed clearly that developmental incentives alone were not enough. Many of the impacted communities need assistance formulating a development plan and making connections with funders and developers. According to one research participant, “The cities, the towns, the villages, and even the counties don’t have an awareness of how to structure a project and get it funded, nor do they have a relationship with funders.” Ideally, developmental incentives should be accompanied with capacity building and technical support to assist local governments to navigate the formulation and execution of a housing development plan.

Support for Predevelopment Activities*

Almost all of the counties expressed a need for new development, but predevelopment activities like market studies can be very costly for nonprofit developers and small communities. Support for predevelopment activities could help communities identify the areas that would be most successful sites for development, and to make a compelling case to potential funders.

Increasing Resources to Address Homelessness*

Belmont, Carroll, Columbiana, Guernsey, Harrison, Jefferson, and Noble counties are in need of more support for their homeless populations. Guernsey and Harrison counties have no homeless shelter at all, and the shelters in the other counties are oversubscribed.

The counties in the target areas fall in the Balance of State Continuum of Care (as defined by HUD), and as such are eligible for one time capital support from DSA/OHFA through the Capital Funding to End Homelessness Initiative. That fund is one possible way in which resources for addressing homelessness could be secured. Many organizations in the area have been recipients of funding through DSA’s Homeless Crisis Response Program (funded in part through the Housing Trust Fund). The dire situation in the counties points to a need for continued support, and indicates a need for additional resources and new strategies for addressing homelessness. It

²³ These recommendations are largely based on the judgments of service providers who are trying to place clients in affordable housing. While these providers are a good source of information about the location of affordable housing shortages, it should be clearly noted that these recommendations are not based on market studies or other formal predevelopment work.

also underscores the need for more affordable housing, to stop the trend toward increasing homelessness.²⁴

Assistance with Community and Regional Planning

Research participants identified the need for local and regional planning to address current housing impacts and better plan for anticipated housing needs that will result from an influx of midstream and downstream companies yet to move to the region. The Ohio State University Extension Office is engaging in a planning process in Eastern Ohio, including all the counties in this study's area of focus. Part of this planning process includes a consideration of housing needs, though this is in no way the exclusive focus of this project. The OSU Extension project is much needed, as researchers did not uncover evidence of any emerging regional plan to address the housing impacts of shale development. Few counties, with the exception of Guernsey County, show many signs of significant collaboration among housing stakeholders.

Given the region's transportation infrastructure and the location of existing housing and homelessness support services in Eastern Ohio, the region would benefit from a multi-county strategy to mitigate affordable housing shortages. A regional plan would leverage community assets, increase coordination and delivery of limited services, and steer resources and development to communities of greatest need.

Interagency Collaboration and Alignment of Resources (Including Funders' Collaborative)*

Providing enough units of quality affordable housing to meet residents' needs has been an ongoing problem for many of the counties under study, even prior to the arrival of the gas and oil industry. Strategies to address the need for more affordable housing should demonstrate awareness of the perennial issues facing these communities, including: lack of water and wastewater infrastructure; lack of sufficient population density to make development deals economically attractive; lack of relevance of Community Reinvestment Act (CRA) credits in many areas, which makes tax credits less attractive to investors; and lack of experience working with developers to craft favorable development deals. Any strategy designed to increase the housing stock in order to meet the need created by the gas and oil industry needs to take these challenges into account.

Addressing all of these obstacles is outside the purview of any one organization. Now more than ever, strategic collaboration between communities, social service programs, and funding agencies is needed in order to help identify and advance creative solutions to meeting the housing needs in rural areas impacted by the gas and oil industry.

One type of interagency collaboration could be a funders' collaborative intended to shepherd development projects in the study area through the financing and development processes. The layering of subsidies needed for successful affordable housing development in the study area is

²⁴ Many research participants made the argument that HUD's current definition of homelessness excludes many of the types of homelessness typically seen in rural areas (the "hidden homelessness" of couch surfing, doubling up, etc.), and so reduces rural areas' eligibility for homelessness support.

a formidable task. Convening funders to ensure that sufficient funding is available to attract developers and to ensure the success of projects would be one way to address this problem. While this increases the demand on funders, it also increases the likelihood that their investments will be fruitful. Funders involved in development in the target areas would likely include OHFA, Ohio Development Services Agency, U.S. Department of Agriculture, and others.

Regional Level

Infrastructure Development

There is a need for collaboration across municipalities in order to develop the infrastructure needed for housing development. If funds are made available to local governments in Eastern Ohio as a result of the severance tax on gas and oil companies (as is under debate at time of writing), these funds could be put to good use developing the region's infrastructure. In particular, these funds could provide the necessary infusion of capital to develop that water and wastewater lines that are needed for housing development. Collaboration across local governments would be needed to achieve this important goal.

Regionally-based Investment

Another approach might be to convene a group of regionally-based investors who, for the purpose of supporting the community, might be more willing to invest in tax credits allocated to development projects in the region (as opposed to non-local investors who take a state-wide, or multi-state view of investment and would find the return on tax credits from the area unenticing). While not a new idea, this might be increasingly possible as the gas and oil industry infuses capital into some portions of the study area. Community-minded investors who are willing to take a lower return on tax credit investments could make needed development possible.

Local Level

Capacity Building

Many research participants identified a need to increase the capacity of local nonprofit developers and local governments with regard to infrastructure development and development of affordable housing. To address this issue, more resources for local development districts and other organizations working to assist communities with proposal and project development is needed. In addition, local entities could also take advantage of trainings offered by organizations like the Ohio CDC Association, Neighborhood Development Services, Inc., and others.

Collaboration with Industry Regarding Short-Term Housing Strategies for Workers

Communities that are concerned that new development will lead to a future excess in housing stock could consider increasing collaboration with the gas and oil industry in order to come up with creative solutions to short-term housing needs. The City of Martins Ferry, for example, has changed zoning laws to allow for an RV park that houses shale workers. While communities understandably have concerns about new, nontraditional housing arrangements, a willingness to consider creative arrangements might help alleviate the pressure on the housing stock that is displacing residents from their homes.

Wealth Retention Strategies

Participants stressed the need to retain the wealth being brought into their counties and to use at least some of it to address the housing impacts of gas and oil development. As one participant asked, “Wouldn’t it be great if you could take the folks that have become wealthy and put together a venture capital fund? . . . So when the oil boom does end we would have long-lasting benefits.”

Some counties have taken initial steps in this direction. The Harrison County Community Foundation Fund (founded by an anonymous donation from a local family that benefited from gas and oil development) has been set up to benefit Harrison County, though it is not specifically directed at housing. Angel networks are being established throughout the region to invest in regional businesses. To date, there are not programs targeting housing needs.

Homeowner Education and Credit Remediation

As more residents contemplate becoming homeowners in the face of rising rental costs, it is important for communities to continue providing education to their residents about the responsibilities of home ownership. Down payment assistance or other homebuyer assistance is not sufficient to create a new population of successful homeowners in the community. While funding programs available to potential homeowners typically require some kind of homeowner education, it is important that support and education for potential and new homeowners is available easily and locally.

A related need is the need for credit remediation for potential homebuyers. Continued local-level efforts to work with residents to repair credit ratings would help make sure that the population in that area is better situated to take advantage of available homebuyer supports.

In areas where these resources are scarce, a regional collaboration among agencies offering credit remediation and homeowner education would be beneficial.

Industry Level

Increase Communication between Industry and State and Local communities.

Research participants in several counties indicated that developers tread a fine line between developing enough housing to address the current housing shortage, and developing so much housing that post-shale communities would have a housing glut. Creative strategies are called for, but participants say that it is hard to plan without clear information about the industry's trajectory in their counties. One participant asked, "At what point does it become uneconomical to drill here and they bail out *en masse*? Then at what point does the pendulum swing and they come back *en masse*?" Understanding that environmental factors can cause unexpected changes for the industry, it still seems likely that closer collaboration between communities and the gas and oil industry could help communities respond in a more informed and proactive way to changing demands for housing.

Investment in Local Communities

The gas and oil industry has often made investments in the communities in which it operates. Frequently these investments are in the form of general community support or support or investment in transportation infrastructure. Specific investment in the infrastructure needed for housing development (water, wastewater) would help communities develop the new housing that they need to address the increased demand at least partly created by the arrival of workers. Investment in community funds that support those adversely impacted by increased housing costs would also help residents in need in the study area.

The following table summarizes the recommendations made in this report. Items in bold are recommendations that could be carried out by OHFA. Suggestions in the same row (federal-, state-, local-, and industry-level suggestions to address a particular challenge) can be combined to form a more robust strategy to address the challenge in question.

Table 5. Strategies for Addressing Impact of Shale Development on Housing and Homelessness

Need	Federal	State	Regional	Local	Industry
<p>Need for new development of affordable housing</p>		<p>Continue support of new development in study region, including through allocation of tax credits and other funding</p> <p>Collaboration among funders to ensure adequate layering of subsidies</p> <p>Support for market studies and other predevelopment activities</p> <p>Support for infrastructure development</p> <p>Advocacy of regional approach to addressing housing impact of shale development</p>	<p>Collaboration across municipalities to develop the infrastructure (water, wastewater) that is a precondition of development</p> <p>Severance tax proceeds used for infrastructure (water, wastewater) development</p> <p>Regional investors' group willing to invest in tax credit projects in study area</p>	<p>Capacity building for local governments to support infrastructure development</p> <p>Capacity building for nonprofits partnering with for-profit developers</p>	<p>Collaborate with local governments and nonprofits to keep information on industry trajectory up to date (to address concerns about future housing excess)</p> <p>Provide support for infrastructure development</p>

Need for rehabilitation of housing stock		Change land bank regulations to allow multi-county collaboration	If it were allowable, pooling of resources and land for land banks.		
Need to address rising costs of rentals	Adjustment of HUD FMRs	Assist with development of new housing and rehabilitation, to reduce demand/supply imbalance (see suggestions for new development and rehabilitation)		Wealth retention strategies with focus on addressing housing issues Collaboration with industry regarding short-term housing strategies for workers	
Need to addressing rising costs of home ownership		Home owner education and assistance, including down payment assistance	Sharing of home owner education and credit remediation resources to make them more widely available through the region	Home owner education and credit remediation Wealth retention strategies with focus on addressing housing issues	
Need to address increased homelessness		Funding for new development of homeless shelters Continued support for homelessness prevention efforts	More formal networks between social service agencies struggling to house clients.	Wealth retention strategies with focus on addressing housing issues	Industry investment in local communities, particularly support for those displaced by changing rental markets

Appendix A: Research Methods

County Selection

The study area consists of Belmont, Carroll, Columbiana, Guernsey, Harrison, Jefferson, Monroe and Noble counties. The counties under study were selected because a significant majority of drilling activity and permitted future drilling is concentrated in this region. The eight counties were also selected because they are contiguous, which allowed the research team to examine regional impacts as well as county-specific changes to the housing market. Final selection of counties was determined in close coordination with OHFA.

Data Collection

Key Informant Interviews

The first phase of the research project consisted of key informant interviews. In coordination with OHFA, purposeful sampling was used to identify informants who were uniquely positioned to provide information on the housing impact of gas and oil development in the target counties.²⁵ Representatives of local governments, economic development organizations, social service agencies, the gas and oil industry, and others were contacted to request interviews. These interviews helped to identify the broad contours of the housing impact in each county. Key informant interviews also helped clarify questions to be used in a later phase of research. They were also used for snowball sampling to identify potential participants for subsequent focus groups. Key informant interviews were conducted by phone using standardized, open-ended interview protocols. A total of 15 interviews were conducted.

Focus Groups and Group Interviews

Key informant interviews were followed by focus groups in Belmont, Columbiana, Guernsey, Harrison, Jefferson, and Noble counties. Focus groups were conducted using standardized, open-ended scripts, and were used both to identify the impact of gas and oil development on housing, and to identify community needs and suggested strategies for addressing the impacts. Additionally, any lack of perceptual agreement noted in the key informant interviews was addressed during the focus groups by asking participants to discuss the issues and reach consensual positions whenever possible.²⁶ While in the counties for focus groups, researchers also arranged to conduct group interviews with caseworkers from Job and Family Services (JFS) offices.

²⁵ For more information on the role of key informant interviews in qualitative research, and the process of purposeful sampling to identify key informants, see “The role and influence of key informants in community-engaged research: A critical perspective” *Action Research* Vol. 11 (June 2013): 113-124 and M. Marshal, (1996). “Sampling for qualitative research” *Family Practice* Vol. 13 (6): 522-525

²⁶ For a discussion of processes used to address lack of perceptual agreement among key informants, see N. Kumar, L. Stern and J. Anderson (1993). “Conducting interorganizational research using key informants” *Academy of Management Journal* Vol. 36: 1633-51

No focus groups were held in Monroe or Carroll counties. The focus group held in Noble County was designed to gather information about both Noble and Monroe counties. In the case of Carroll County, it had become clear during the key informant interviews that residents of that county had been inundated with requests for research participation and were suffering from research fatigue. Instead of trying to assemble a group of participants for a focus group, researchers decided to conduct phone interviews with additional Carroll County representatives.

During the focus groups and group interviews, researchers asked participants to complete a brief questionnaire. The questionnaire asked what sector the participant represented, what counties the participant’s organization served, how frequently the participant dealt with housing issues, and how much impact they had noted on housing and homelessness since the arrival of the gas and oil industry. These questionnaires helped researchers to understand the degree of expertise of participants, and the points of view represented in each focus group. Seventy-six questionnaires were completed by participants. Over two-thirds of those completing the questionnaires (72.4) did so at focus groups or group interviews in Columbiana and Belmont counties. All counties in the study area, as well as Tuscarawas and Washington counties, were included in the service areas of those completing questionnaires.

Over 63 percent of those completing questionnaires indicated that they deal with housing-related issues in their work more than once a week. Over 89 percent of those completing questionnaires indicated that they provide services to seniors, children, or families/individuals with low-incomes or disabilities as part of their work responsibilities. Over half (51.4 percent) of those completing a questionnaire indicated that shale development has had “quite a bit” or “a lot” of impact on housing and homelessness in their organizations’ service areas. Most (97.2 percent) of those completing questionnaires indicated that shale development has had at least “a little” impact on housing and homelessness in their organizations’ service areas. The most frequently offered open-ended comments were statements to the effect that the cost of housing is increasing, followed by statements to the effect that there is a lack of affordable housing in the area. See Appendix B for a summary of questionnaire results.

Table 6 below provides more details on the logistics of the focus group phase of research.

Table 6. Focus Group/Group Interview Research

Date	Focus Group/Group Interview	Number of Participants	Counties Discussed
July 24, 2014	Belmont County Focus Group	7	Belmont
July 24, 2014	Belmont County JFS Caseworkers Group Interview	23	Belmont
July 25, 2014	Columbiana County Focus Group	8	Columbiana
July 25, 2014	Columbiana JFS Caseworkers Group Interview	17	Columbiana
July 29, 2014	Guernsey County Focus Group*	16	Guernsey

August 7, 2014	Harrison County Focus Group	4	Harrison
August 7, 2014	Noble County Focus Group	8	Noble, Monroe
August 7, 2014	Noble County Case Manager Interviews	2	Noble
September 24, 2014	Jefferson County Focus Group	10	Jefferson

*The Guernsey County focus group was held during a meeting of the Guernsey County Housing Advisory Committee.

Supplementary Interviews

After focus groups were completed, researchers concluded that concept saturation had not been met for all of the target counties, and more research was necessary. Because it seemed likely that focus groups would lead to the collection of redundant information in addition to filling data gaps, researchers chose to conduct a series of follow up interviews in order to obtain the specific pieces of missing information. Seventeen additional interviews were conducted in the final stage of the data collection process. Researchers also reached out to informants in Tuscarawas and Washington counties, based on information gathered in previous phases of research that indicated that these two counties were being impacted by shale activity in the target counties.

In all, a total of 128 people representing 66 organizations contributed information to this report. See Appendix A for a list of organizations represented by research participants.

Note: Researchers reached out to gas and oil companies in an effort to learn about their housing needs, policies, and practices, as well as the scope of their present and future activities in the region. Unfortunately, oil and gas companies chose not participate in the research process.

Data Analysis

Interviews and focus groups were recorded with the permission of research participants. Data were managed using MAXQDA qualitative analysis software, and content analysis was performed by researchers using an *a priori* coding framework drawn from the existing literature and from the main lines of questioning in the key informant interviews, group interviews, and focus groups.²⁷ When possible, publicly available secondary data was collected to help understand the impact of shale development on housing and homelessness in these counties.

²⁷ C. Glesne (1999). *Becoming qualitative researchers: An introduction*. New York: Addison Wesley Longman, Inc; J. Holton (2007). "The coding process and its challenges" in A. Bryant and K. Charmaz, *The SAGE handbook of grounded theory*. Thousand Oaks, CA: SAGE Publications, Inc.

Appendix B: Research Participants

The following organizations contributed to the research process:

Anderson Realty (Noble County)	Governor's Office of Appalachia
Alive Shelter, Battered Women's Shelter Service (Jefferson County)	Habitat for Humanity (Guernsey County)
Area Agency on Aging, Region 8	Habitat for Humanity of Northern Columbiana County
Area Agency on Aging, Region 9	Habitat for Humanity of Southeast Ohio
Belmont County Community Action Agency	HARCATUS Community Action, Inc.
Belmont-Harrison-Noble County Boards of Developmental Disabilities	Harrison Metropolitan Housing Authority
Belmont County Department of Job and Family Services	Harvey Goodman Realtor (Belmont County)
Belmont Metropolitan Housing Authority	Haven of Hope (Guernsey County)
Belomar Regional Council	Jefferson County Community Action
Ben Schafer Realty (Noble County)	Jefferson County Department of Job and Family Services
Buckeye Hills-Hocking Valley Regional Development District	Jefferson County Port Authority
Cambridge, Noble and Monroe Metropolitan Housing Authorities	Jefferson Metropolitan Housing Authority
Carroll County Department of Job and Family Services	Milleson Insurance Agency (Harrison County)
Christina House/Catholic Charities Regional Agency (Columbiana County)	Monroe County Board of Developmental Disabilities
City of Cambridge Office of Economic and Community Development	Muskingum Watershed Conservancy District
City of Martins Ferry	Noble County Health Department
Columbiana County Department of Job and Family Services	Noble County Department of Job and Family Services
Columbiana Metropolitan Housing Authority	Noble County Emergency Management
Columbiana County Mental Health Clinic	<i>Ohio Gas and Oil</i> magazine
Community Action Agency of Columbiana County	Ohio Mid-Eastern Government Association
Disability Housing Network	Ohio Oil and Gas Energy Education Program
Family Recovery Center (Columbiana County)	Salem Area Chamber of Commerce (Columbiana County)
Frye-Re/Max Partners (Guernsey County)	Salvation Army (Belmont County)
Guernsey County Board of Developmental Disabilities	Southern Columbiana County Regional Chamber of Commerce
Guernsey County Department of Job and Family Services	Scot-Ogle Realty (Guernsey County)
Guernsey County Veterans Services	Southeastern Ohio Landlords Association
Guernsey Metropolitan Housing Authority	Southeastern Ohio Legal Services
GMN Tri-County CAC, Inc.	Swiss Lands Realty, LLC (Monroe County)
	The Ohio State University Extension
	United Way of Jefferson County
	Urban Mission (Jefferson County)
	Vorys Advisors, LLC
	Washington County Job and Family Services
	Wesbanco

Appendix C. Focus Group/Group Interview Questionnaire Frequencies

At each focus group and group interview, researchers asked participants to complete a brief questionnaire consisting of four closed ended questions and one open ended question. Frequencies of responses are given in the tables below.

Table 7. Number of Questionnaires Completed

County where focus group or group interview took place	Number	Percent
Columbiana County	25	32.9
Belmont County	30	39.5
Noble County	10	13.2
Harrison County	4	5.3
Jefferson County	7	9.2
Total	76	100.0

Table 8. In what sector do you work?

Sector	Number	Percent
Government (includes state-funded social service agencies and local governments)	51	67.1
Nonprofit	20	26.3
For profit	1	1.3
No answer	3	3.9
Other	1	1.3
Total	76	100.0

Table 9. In what county (or counties) do you work?

County	Number
Belmont	33
Carroll	8
Columbiana	26
Guernsey	5
Harrison	9

Jefferson	10
Monroe	6
Noble	10
Tuscarawas	5
Washington	2
Total (note that some participants represented multiple counties)	114

Table 10. In the work that you do, how often do you deal with issues related to housing?

Frequency	Number	Percent
More than one a week	48	63.2
Once a week	7	9.2
Every 2-3 weeks	5	6.6
Once a month	4	5.3
Less than once a month	12	15.8
Total	76	100.0

Table 11. In the work that you do, how often are you providing services to seniors, children, or families/individuals with low-incomes or disabilities?

Frequency	Number	Percent
More than once a week	66	89.2
Once a week	3	4.1
Less than once a week	0	0.0
Every 2-3 weeks	1	1.4
Less than once a month	4	5.4
Total	74	100.0

Table 12. Based on your professional experience, what impact do you think shale development has had on housing and homelessness in the county (or counties) in which you work?

Amount of Impact	Number	Percent
None	2	2.8
A little	8	11.1
Some	25	34.7
Quite a bit	17	23.6
A lot	20	27.8
Total	72	100.0

Table 13. As you thought about coming to this gathering today, what was the most important message or piece of information that you wanted to share about how the gas and oil industry is impacting housing and/or homelessness in the region?

Comment	Number
The cost of housing is increasing	24
There is a lack of affordable housing in the area	15
The existing housing stock is substandard	5
Displacements from homes are happening	3
The issue of homelessness needs attention	1
Fair Market Rents are too low	1
There has been no impact yet	1
The shale industry is having a positive impact on employment availability	1

Appendix D. Fair Market Rents in Study Area, 2011-2015

Source: U.S. Department of Housing and Urban Development Data Sets: Fair Market Rents (<http://www.huduser.org/portal/datasets/fmr.html>)

Table 14. Belmont County Fair Market Rents, 2011-2015

Year	1-Bedroom	2-Bedroom	3-Bedroom
2011	\$467	\$596	\$749
2012	\$457	\$584	\$734
2013	\$494	\$615	\$789
2014	\$493	\$614	\$788
2015	\$509	\$634	\$814

Table 15. Carroll County Fair Market Rents, 2011-2015

Year	1-Bedroom	2-Bedroom	3-Bedroom
2011	\$497	\$628	\$793
2012	\$509	\$643	\$812
2013	\$493	\$642	\$843
2014	\$509	\$662	\$870
2015	\$519	\$675	\$887

Table 16. Columbiana County Fair Market Rents, 2011-2015

Year	1-Bedroom	2-Bedroom	3-Bedroom
2011	\$504	\$609	\$753
2012	\$484	\$584	\$722
2013	\$476	\$615	\$814
2014	\$476	\$614	\$813
2015	\$500	\$645	\$854

Table 17. Guernsey County Fair Market Rents, 2011-2015

Year	1-Bedroom	2-Bedroom	3-Bedroom
2011	\$517	\$596	\$787
2012	\$507	\$584	\$771
2013	\$481	\$615	\$768
2014	\$481	\$614	\$767
2015	\$496	\$634	\$792

Table 18. Harrison County Fair Market Rents, 2011-2015

Year	1-Bedroom	2-Bedroom	3-Bedroom
2011	\$474	\$596	\$763
2012	\$465	\$584	\$748
2013	\$512	\$615	\$875
2014	\$511	\$614	\$874
2015	\$527	\$634	\$902

Table 19. Jefferson County Fair Market Rents, 2011-2015

Year	1-Bedroom	2-Bedroom	3-Bedroom
2011	\$483	\$596	\$744
2012	\$474	\$584	\$729
2013	\$500	\$615	\$824
2014	\$499	\$614	\$823
2015	\$533	\$656	\$879

Table 20. Monroe County Fair Market Fair Market Rents, 2011-2015

Year	1-Bedroom	2-Bedroom	3-Bedroom
2011	\$496	\$596	\$732
2012	\$486	\$584	\$717
2013	\$519	\$615	\$766
2014	\$518	\$614	\$765
2015	\$535	\$634	\$790

Table 21. Noble County Fair Market Rents, 2011-2015

Year	1-Bedroom	2-Bedroom	3-Bedroom
2011	\$496	\$596	\$732
2012	\$486	\$584	\$717
2013	\$482	\$615	\$847
2014	\$481	\$614	\$845
2015	\$497	\$634	\$873



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